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DESCRIPTIVE INDEX
OF
PATENTS APPLIED FOR AND PATENTS GRANTED,
BEING
THE ABRIDGMENTS OF PROVISIONAL AND COMPLETE SPECIFICATIONS
For the Year 1868.

Printed and Published by Order of the Commissioners of Patents
UNDER THE
ACT of 15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.

BY BENNET WOODCROFT,
CLERK TO THE COMMISSIONERS OF PATENTS.

17d . j . 1014

PREFACE.

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PATENT LAW AMENDMENT ACT, 1852.
15 & 16 VICT. c. 83.

By the Right Honourable Frederic Lord Chelmsford Lord High Chancellor of Great Britain, the Right Honourable John Lord Romilly Master of the Rolls, Sir John Rolt Her Majesty's Attorney General, and John Burgess Karslake Esquire, Her Majesty's Solicitor General, being four of the Commissioners of Patents for Inventions under the said Act.

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JOHN B. KARSLAKE.

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B. WOODCROFT.

December, 1869.

15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.

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CLERK TO THE COMMISSIONERS OF PATENTS.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
PUBLISHED AT THE OFFICE OF THE COMMISSIONERS
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SOUTHAMPTON BUILDINGS, HOLBORN.

1868.

[Price 1*s*. 8*d*.]

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For the Quarter ending 31st March 1868.

A.D. 1868, January 1.—N° 1.

LAKE, William Robert.—(*A communication from Edouard des François de Pontchalon.*)—"Improvements in apparatus for regulating the speed of steam and other engines, and for indicating the power of "the same."

My invention consists chiefly in the mode of arranging differential wheels for causing two opposing forces to produce a regulating action upon the throttle valve of a steam or other engine, and for ascertaining the amount of power developed by such engines, and also in the devices employed in combination with the said wheels to bring them properly under the influence of the two opposing forces. In one arrangement of parts arms or levers are fixed upon a shaft or spindle and provided at their outer ends with vanes or small fly wheels, or with both combined. These vanes or fly wheels are fitted to turn freely in bearings formed in the arms, and are provided with pinions working into a toothed wheel which is connected to a pulley whereby it receives motion from the engine to be regulated. The resistance of the air to the revolution of the vanes upon their axes tends to move the arms in the direction for closing the throttle valve against the force of a spring, weight, or other device, which pulls the arms in the other direction. When it is desirable to have the benefit of an isochronous movement without the weight of the vibrating arms and other parts connected to the same, the pinions should be firmly fixed centrally to other wheels or pinions, which should gear again into a central pinion attached to and moving with a vibrating sleeve on the main spindle or shaft, which sleeve is arranged to operate the throttle valve. In this latter arrangement an isochronous momentum wheel may be substituted for the lever arm or arms, and this wheel carries the outer pinions around with it. When my invention is to be applied to a dynanometer the driving pulley or drum receives motion from the engine, and a second pulley is substituted for the isochronous wheel. This second pulley communicates motion to the machinery to be driven, and the power required to drive the same is indicated upon a dial by a pointer operated by the vibrating sleeve.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, January 1.—N° 2.

LAKE, William Robert.—(*A communication from Benjamin Sherwood and Daniel Fitzgerald.*)—"Improvements in fire and burglar proof safes."

The said invention consists chiefly in the employment of a spherical or nearly spherical burglar-proof casket which is only accessible from an opening in the side of the safe. The said invention also consists in the arrangement of the said casket in combination with a case for books or other articles, which is made to draw out of the safe when required; also in providing the safe with a platform to support the said book-case when drawn out.

[Printed, 8*d.* Drawing.]

A.D. 1868, January 1.—N° 3.

LAKE, WILLIAM ROBERT.—(*A communication from Elisha Gray.*)—" Improvements in electric telegraph " apparatus."

My invention relates to the use of an inductive apparatus in connection with a relay at each office, and the use of an inductive to and fro current to operate the relay instead of the direct or battery current. The inductive apparatus is furnished with two relay magnets, which are arranged in the line circuit, and are so connected that their polarity is opposite when they face each other. When a current passes through the coils of these magnets the latter by induction magnetize the cores of two straight magnets which are connected by wires and included in the same circuit as the two first magnets. These magnets are clamped together by means of a rod or by making continuous cores through the magnets. The relay instrument is provided with electro magnets and with a permanent magnet, which is secured to the armature lever and takes the place of the ordinary soft iron armature. The poles of the permanent magnet vibrate between the poles of the electro magnets, which are so arranged that when a current passes through them one will repel while the other attracts the permanent magnet. When by induction a momentary current is produced in the cores of the straight magnets the said current passes in one direction through the electro magnets of the relay while the primary current is closed, and in the other direction when the primary current is open, and as often as the battery current is closed by any key the relay armature moves in the opposite direction.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, January 1.—N° 4.

GOODYAR, GEORGE ARCHIBALD DINELY.—" Improvements in the method of and machinery for " propelling boats or vessels."

According to this invention boats are propelled by means of paddle wheels or screws worked by manual power by means of a lever or levers, connecting rods, and cranks. The levers may be horizontal or vertical, or a single vertical lever may be used to work the paddles or screw, or a single paddle at the stern.

The invention is applicable chiefly to fishing and pleasure boats.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 1.—N° 5.

STROUDLEY, WILLIAM.—" Improvements in re-railing or replacing carriages or waggons on rails of " railways."

According to this invention a pair of inclined iron or metal guide plates are applied to the rails, one end of the guide plates resting on the rails, to which they are secured by a hooked flange under the guide, the other end resting on the sleepers or ballast.

The carriage or waggon may then be drawn up the guide and on to the rail by the tractive power of the locomotive.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 1.—N° 6.

WOOD, WILLIAM, and WOOD, JAMES WILLIAM.—(*Provisional protection only.*)—" Improvements in " the manufacture of cardings and yarns."

This Provisional Specification relates to the manufacture of cardings and yarns in such manner that parts of the length of each carding and yarn are made of different colors or materials during or in the process of its formation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 1.—N° 7.

CLARK, ALEXANDER MELVILLE.—(*A communication from William Armstrong.*)—" Improvements in " breech-loading ordnance."

A space is made in the breech end of the gun for receiving a separate chamber containing the charge, which is provided with handles for lifting in and out. A wedge is inserted behind this movable block for fixing it in position in the breech, which is released or fixed by the aid of an eccentric on the end of a central axis projecting through the rear end of the gun and provided with a hand lever. The act of rotating the central axis for releasing the charge chamber at same time moves back a central striker employed for discharging a cap, which is placed on a nipple projecting into the charge chamber. By rotating the axis in the reverse direction, by the aid of the hand lever, the wedge at once fixes the position of the breech block, and allows the striker to act on the cap by the aid of a spring.

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A.D. 1868, January 1.—N° 14.

DAFT, THOMAS BARNABAS.—"Improvements in the construction of iron ships and vessels."

This Provisional Specification describes a vessel in which all the "lines" are straight, and which has wedge ends.

Also an improved method of marking the frame and plates.

Also the leaving narrow openings between the plates and jamming a caulking strip of wood into them. A sheathing of zinc is nailed on to the caulking strips. Or the plates may be drilled partly through to receive rivets to hold on the sheathing, or plugs may be introduced into these holes and nails driven into them.

[Printed, 2*s*. Drawings.]

A.D. 1868, January 1.—N° 15.

RAMSBOTTOM, JOHN, and PEARCE, THOMAS MASSEY.—(*Provisional protection only.*)—"Improved "engines and generators for the same, to be worked by heated air, steam, or other gases or vapours."

This invention relates to further improvements in "intermedial engines" and in generators for the same, for which Letters Patent were granted to the said John Ramsbottom, A.D. 1866, No. 3158; and consists in constructing such engines vertically or horizontally, having governing apparatus on upper part or top of cylinder and slide valves at each end thereof worked from crank shaft by stud or eccentric. The engine may be worked by heated air or gas, regulated by "drop valves" worked by cams, generator constructed close to cylinder, with throttle valve and drop valves as before mentioned. Air may be heated by means of petroleum, gas jet apparatus, gauze being employed to protect petroleum or gas from accidental firing. A pump supplies air to regulate combustion. Engine for traction purposes may be placed under vehecle and transmit motion thereto by means of gearing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 1.—N° 16.

VETTE, BERTHA.—(*Provisional protection only.*)—"Improvements in the manufacture of 'crossovers,' "scarves, and other articles of apparel known as frame and knitted woollen goods."

The form is set up as usual and the foundation threads extended by pins. The other threads are then not knotted or sewn as usual over the foundation threads, but are interwoven or drawn through.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 1.—N° 17.

FOSTER, DAVID.—(*Provisional protection only.*)—"Improvements in the manufacture of anvils (of all "kinds) for smiths, and every description of top and bottom faces for hammers for drawing-out "purposes."

This Provisional Specification describes an improved method of manufacturing anvils, and consists in forming them in moulds by combining cast iron and steel together.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 2.—N° 18.

HAMILTON, MILTON ALEXANDER.—(*Provisional protection only.*)—"An improved churn."

My invention relates to churns in which the butter is produced by the action of a reciprocating piston or plunger upon the milk or cream which is contained within a cylindrical or other suitably shaped vessel. The said invention consists in constructing the piston or plunger with a series of discs or rings which form chambers whereby the air is collected and forced into and through the milk or cream during the process of churning.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 2.—N° 19.

KRÜSS, EDMUND JOHANN, and KRÜSS, WILLIAM ANDRES.—"A new or improved camera or lantern "for reflecting opaque objects."

The opaque object is placed in a box opposite a tubular mouth like that of a magic lantern; a lamp or candle is introduced into the bôx between a curved reflector and concentrating lenses; the reflected rays, together with the direct rays of the lamp, pass through the concentrating lenses which concentrate them upon the object.

The powerful light thus thrown on the object admits of the image being reflected through the tubular mouth, and an object glass in the mouth magnifies the image.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 2.—N° 20.

IZOD, Edwin.—" Improvements in the finishing of stays and in means or apparatus employed therein."

The invention consists, firstly, in placing the stays after they are sewn together and the "bones" are inserted on suitable moulds, shapes, or blocks which are heated by steam, hot water, or other suitable means, starch or other suitable stiffening material being previously applied to the stays. The stays are retained on the moulds, shapes, or blocks until they and the "bones" therein are set to the desired shape.

The moulds, shapes, or blocks are, according to the second part of the invention, constructed of glass, earthenware, china, or cast metal, and in order to cheapen and facilitate the manufacture of such moulds, shapes, or blocks a model or pattern of the stays is obtained in the following manner:—The stays are first fastened together and a top and bottom applied thereto so as to form a bag, into which is pressed saw-dust, bran, or other suitable material; a coating of plaster of Paris or other suitable cement is then applied to the outside of the stays, and when such cement has sufficiently set, the saw-dust or other material is removed from the inside of the stays and a semifluid composition of plaster of Paris or other suitable cement poured therein, which when set and separated from the stays serves for a model from which moulds are prepared in the usual manner of preparing moulds for the manufacture of articles of glass, china, earthenware, or cast metal.

[Printed, 6d. Drawing.]

A.D. 1868, January 3.—N° 21.

COX, Ann, executrix of John Cox.—" Certain improvements in fastenings for sleeve links, which said " improvements are also applicable to the fastening of brooch pin points, belt and other clasps, gloves, " stay and legging busks, and other dress and jewellery fastenings."

The novelty of this invention consists in making the man part of the detent or fastening for the purposes hereinbefore described of a round tubular form acting in its lengthway direction to be used with or without a spring.

[Printed, 6d. Drawing.]

A.D. 1868, January 3.—N° 22.

COCKINGS, James Septimus, and POTTS, Ferdinand.—(*Provisional protection only.*)—" Certain " improvements in welded iron tubes for gas and other purposes where strength and lightness are " required."

The novelty of our invention consists, first, in making welded tubes of iron rolled with lengthway ribs either on one or both sides, whereby all necessary strength is preserved with great reduction of weight.

Secondly. In equalizing the surface at the ends of such tubes after welding by applying an external collar and driving in a drift, thereby esuring a sound surface either for tapping or screwing.

[Printed, 4d. No Drawings.]

A.D. 1868, January 3.—N° 23.

KEY, Turner Powell Aston.—" Improvements in scaffolding to be used for the erection of houses, in " the streets of populous places."

Instead of placing the scaffold poles in holes in the ground I erect hollow wrot iron columns braced and capped by girders. Into the columns are inserted the usual poles.

The cross girders are planked, and the whole of the building materials is placed on the platform thus formed, while the traffic flows beneath without let or hindrance.

I thus do away with hoarding nuisance and with the carriage of materials over the pavement; the bricks other necessaries being conveyed direct from the pavement edge, where the cart may be to the first floor of the scaffold.

[Printed, 4d. No Drawings.]

A.D. 1868, January 3.—N° 24.

LONG, César.—(*A communication from Charles Louis Klein and Jules Vallée.*)—(*Provisional protection only.*)—" A new or improved mode and apparatus for eliminating a portion of the azote in furnaces and " fire-places and for utilizing the oxygen and hydrogen of water as facilitators of combustion and as fuel or " as reducers and in some cases as decarburators."

The main features are, 1, the employment of water in furnaces and fireplaces and the elimination of a part of the azote as well as the production of oxide of carbon without a special receiver, all with the view of economizing fuel; and, 2, the use of water as a reducer in metallurgy and of carbonic acid and hydrogen for reducing sulphurets, arsenurets, and phosphurets; also the use of carbonic acid as a decarburator of the carburets of iron to produce steel, iron, and malleable cast iron.

It is stated that the loss of caloric in furnaces is to a great extent due to the presence of a large amount of azote which is a useless gas and simply absorbs the ambient caloric; the loss of caloric is much diminished by the employment of water or steam as described.

In applying the invention to boiler furnaces the grate is composed of metal tubes having small holes at their upper surface; steam from the boiler enters the tubes and is injected from the holes; a pipe draws in air from below the grate and discharges it under the boiler, where it burns the oxide of carbon.

In applying it to metallurgy a blast furnace is employed, each of the tuyeres of which has a pipe to inject water or preferably steam, which is under a greater pressure than the current of air. The steam introduced should always be at least ¾ the weight of the air, and the amount of air injected should not be diminished in consequence.

The gases evolved from the furnace consist in 100 parts, of 10·7 carbonic acid, 29·5 oxide of carbon, 43·1 azote, 2·8 protoxide of hydrogen, and 13·9 hydrogen.

These gases are collected in a special apparatus and are employed for refining iron; a pump draws the gases from the bottom of this apparatus, where there is a large quantity of carbonic acid, and they are injected with a little air into a crucible containing the cast iron in fusion. The carbon of the iron combines with the carbonic acid to form oxide of carbon, and the iron is thus decarburetted. The sulphur and phosphorus are removed by the hydrogen, while the arsenic forms with hydrogen an arsenious hydrogen which volatilizes. Steel can be obtained by stopping the injection of the gas before complete decarburation.

The apparatus for collecting the gases has other outlets communicating respectively with the crucible, the blowing apparatus, and the tuyeres.

The process of reducing titaniferous ores according to this invention is fully explained.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 3.—N° 25.

DELLAGANA, James, and DELLAGANA, Bartholomew.—" Improvements in printing machines and " in the manufacture of electrotype blocks to be used in such machines."

1. Cylinders for carrying curved blocks for printing from, have adjustable rings undercut at their sides to hold the blocks, the edges of which are received under the rings.

2. Rollers for distributing ink on a cylindrical printing table are fitted at one end in bearings in an oscillating frame and at the other end in fixed bearings; these rollers have long journals. The rotation of the cylindrical table and the oscillation of the frame cause the rollers to revolve and at the same time to travel along the table in alternate directions, so that the ink is uniformly distributed.

3. Feed apparatus is made of endless travelling webs in combination with grippers or drop bars; the grippers are carried by the webs, and are opened and closed at proper times by cams or otherwise. The sheets are placed on a laying-on board, from which the grippers take them; stops, which rise at the proper time, preventing the sheets being carried off too soon. There may be any convenient number of laying-on boards.

4. Taking off or delivering apparatus consists of an oscillating fan or light frame working at its lower end on a transverse bar between two tables and actuated by appliances connected with the gearing of the machine. The oscillations of the fan are so timed that it takes the sheets from the delivery tapes in both motions and lays them alternately on the two tables; it is thus double acting.

5. Means of changing the blanket on the blanket cylinders.—Two rollers are fitted in the cylinder and the blanket passes round each; then by drawing one roller and slackening the other another part of the blanket is brought round the cylinder.

6. Printing machines to work at four points, two points, or one point, according to requirement.—There is a single type cylinder between two blanket cylinders and a pair of type cylinders with a blanket cylinder between them. The sheets are fed at the two ends simultaneously; those from one end pass first between the single type cylinder and the upper blanket, and then between the upper of the pair of type cylinders and their blanket; those from the other end pass first between the lower of the pair of type cylinders and then under the single type cylinder. This machine may be made to work on only one side of the paper by taking away one of the type and one of the blanket cylinders.

7. Manufacture of curved electro-type blocks.—The matrix, taken in wax or gutta percha, is placed when warm in a curved plate corresponding with the circumference of the printing cylinder, and it is bent to the curve of this plate, then submitted to the galvanic bath, whereby a printing surface of the desired curve is obtained. After its back has been tinned it is placed in a mould, dipped in the ordinary molten metal, and molten metal is continued to be run in during the cooling. A curved electro-type block of the required thickness is thus produced.

[Printed, 1*s*. Drawing.]

A.D. 1868, January 3.—N° 26.

ROY, MARY ELIZA, and PREVETT, LOUISA.—" An improved receptacle for containing needles, thread, " and other articles."

The receptacle is made preferably of the shape of an egg and egg cup combined, the upper half of the egg forming the lid. The cup is hollow and contains a central spindle having a spring tape or measure coiled round its lower part, to be drawn out through a slit in the side of the receptacle. The spindle also carries a reel and thimble and pin cushion combined.

The spring measure may also be mounted in the foot of the receptacle and the spindle be made to revolve and wind up the measure by rotating the thimble cushion; a corrugated metal lining is also used for needles, which are inserted between the corrugations and the inside of the receptacle.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 3.—N° 27.

FRISBIE, MYRON JOHN.—" Improvements in mechanism or apparatus for feeding fuel into furnaces, fire " boxes, and fire grates."

These improvements refer to certain arrangements of mechanism for feeding fuel into furnaces, fire boxes, or fire grates through an opening in the bottom thereof and into the midst of the burning fuel. Three arrangements are described, all comprising the use of a fuel feed box, which is moved under the opening at the bottom of the furnace fire box, or fire grate, when the bottom of the feed box, which is moveable similarly to a piston, is pushed up and forces the fuel into the midst of the burning mass. Upon feeding being effected the fuel feed box is drawn away and the opening in the bottom of the furnace fire box, or fire grate is closed by a closing plate, which follows the movements of the fuel feed box. The Specification refers to drawings which shew the three arrangements above mentioned, one of which is particularly useful for domestic fire grates and has the moveable bottom of the feed box workable by a single bar or lever, which is capable of lateral movement to bring the feed box after being filled with fuel under the opening at bottom of the furnace fire box, or grate to feed the fuel; and also has a vertical movement in order to actuate the moveable bottom. Lateral movement also withdraws the feed box after feeding is effected. Another arrangement comprises the use of two levers and rocking bar for effecting the same objects. And the third arrangement is a system of levers and wheel, with apertures for the insertion of a lever or handspike; this arrangement being specially adapted for glass factories; being placed in the cave or ashpit.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, January 4.—N° 28.

EMMERSON, JOHN THOMAS, and MURGATROYD, JOSHUA.—(*Provisional protection only.*)—" Improvements in the manufacture of iron and in the application thereof to certain useful purposes."

Our invention consists in the application of titanic iron, either alone or combined with other iron, to the manufacture of armour plates, ordnance, projectiles, hydraulic rams, and cylinders and other articles, or for converting into steel such combinations, producing iron of great hardness, strength, and fineness of fibre.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 4.—N° 29.

MORLEY, WILLIAM WILSON.—(*Provisional protection only.*) — " Printing of paper bags while in the " process of making, by Shaw's patent or other bag machines, or for printing paper from the reel."

The novelty of this invention consists in a printing machine, with inking and form table, in the shape of a segment of a cylinder vibrating forwards and backwards on a central shaft below, fed by ink-box and rollers suitably placed, and an impression cylinder, which by an arrangement of slide cams is lifted during the return movement of the table, when it is not wanted; by this addition to a bag machine printing and making are done by one operation, completely saving a separate printing machine and the cost and time of working, or if used alone without bag machine it can rapidly print and cut at the same time paper from the reel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 4.—N° 30.

BLINKHORN, WILLIAM JOHN.—" Improvements in the manufacture of snuffless dip candles, and in " apparatus employed therein."

The object, to reduce cost of labour and plant in the manufacture, and produce candles of better quality, as regards hardness and appearance.

The wick is streched between fixed points on a frame, hereafter described, in lines and dipped whilst in this condition, either partially to form candle cores cr wholly to form the candles.

The frame consists of two longitudinal bars with pins or studs, called fixed points, formed or fitted on both sides thereof.

These bars are connected by moveable transverse pieces which when the wicks are cut through near one line of fixed points, allows of their removal with one of the bars and the suspension of the candle cores or candles from one bar.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 4.—N° 31.

NEWTON, William Edward.—(*A communication from William Farr Goodwin.*)—" An improved mechanical arrangement for converting power into speed and speed into power and for multiplying and transmitting motion for all purposes where such movement can be applied and used."

A series of wheels are placed within a toothed cylinder on and around one shaft or axle, whereby any desired number of revolutions can be produced and any required power can be obtained for converting speed into power and power into speed for multiplying and transmitting motion.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 4.—N° 32.

SPENCE, Peter, and SMITH, William Anderson.—(*Provisional protection only.*)—" Improvements in storing meat for transport whereby it may be preserved, and in apparatus connected therewith."

This invention consists in placing the meat to be preserved in tanks through which a current of cold air is caused to pass whereby the meat becomes frozen.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 4.—N° 33.

ATKINSON, William Henry.—" Improvements in the preparation and use of compositions for cleansing and sweetening casks and other vessels, such compositions being also applicable to other purposes."

This invention consists in the preparation and use of the compositions hereinafter described for cleansing and sweetening casks and other vessels, which said compositions may also be used for cleansing bedsteads and other surfaces.

The first composition consists of twenty pounds of common soda and three pounds of hydrate of potash, which are heated together in a suitable vessel and allowed to cool.

The second composition is prepared by heating together in a suitable vessel, one pound by weight of sulphuric acid and forty pounds of sulphate of soda, and by adding to this mixture when evaporated to dryness common salt in the proportion of about one part of salt to two parts of the mixture.

In cleansing a cask by means of the said compositions the composition first described is dissolved in water and the solution is poured into the cask and caused to boil therein by means of a steam pipe. The solution is then run out and the cask is washed with hot water. The cask is then washed with a solution of the second composition.

In cleansing bedsteads or other surfaces with the aforesaid compositions the surface is scoured with a hot solution of one of the said compositions, or first with a solution of the composition herein first described, and then with a solution of the composition herein last described, the said solutions being washed off with hot water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 4.—N° 34.

ALBINI, Augusto.—" Improvements in cartridge belts or pouches."

According to one of these improvements the belt or pouch is composed of one or two rows of tubes closed at bottom, and connected between two bands of leather or other flexible material, the bands being sewn together at their ends and between each two contiguous tubes. The tubes are also secured to the bands by rivets passing through their bottom ends. The cartridges are placed in the tubes, projectile downwards, the bases of the cartridges projecting from the tops of the tubes.

The cartridges are covered by flaps or by a divided tubular flexible covering.

According to another of these improvements the tubes are open at top and bottom, and are sewn between bands of leather. The bottom end of each tube is conical, and is fitted with a perforated diaphragm of india rubber. The cartridges are introduced into the tubes at their bottoms, the bases of the cartridges being pushed through the holes in the india rubber diaphragms, which contracting prevent the return of the cartridges. The cartridges are removed by pressure on the ends at the tops of the tubes, caps being pressed down into the tubes when the cartridges are removed, and show when the tubes are empty. The lower ends of the tubes are covered by flexible flaps.

[Printed, 1*s*. Drawings.]

A.D. 1868, January 4.—N° 35.

GRAY, William Benjamin.—(*Provisional protection only.*) — " Improvements in spinning and twisting " machines."

This invention consists in an improved mode of preserving an uniform tenison of the thread or yarn during the filling of a bobbin by the use of a cylindrical lining in the bobbin, and of a cylinder or tube flanged at its base and fixed on the builder rail of a frame, and over which the cylindrical lining fits freely. The increased friction thus secured may be further increased when necessary by the use of a leather or other similar disc placed upon the flange of the cylinder or tube, and of a flange at the base of the cylindrical lining.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 4.—N° 36.

MUDGE, George.—(*Provisional protection only.*)—" Improvements in adjustable lock furniture."

The novelty of invention is that the knob is fixed on the ordinary square spindle by means of a loose pin which is secured in its place by means of a moveable collar, and the [*rose* *] is fixed to the door or otherwise by means of a plate with studs.

The whole is thereby securely and firmly fixed without screw or thread of any kind whatsoever.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 4.—N° 37.

NIXON, John.—" Improvements in apparatus for transferring coal or minerals from railway waggons into " barges."

This Provisional Specification describes the use of a carriage running along the edge of a river wall; this carriage receives upon it the loaded waggon, carries it along to where a barge is lying, then tips it, discharging the coal down a shoot mounted on the carriage, and carries back the empty waggon to a line of rails on to which it is received.

There is a steam engine on the carriage which furnishes the motive power for the several operations.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, January 6.—N° 38.

PLATTS, George, TATE, William, and BAILEY, William Henry.—(*Provisional protection only.*) —" An improved mode or method of and apparatus for laying fog signals on railways."

The features of novelty in this invention consist in the construction of a single apparatus for laying fog signals upon the metals or rails from a carriage, wagon, or vehicle in motion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 6.—N° 39.

SOUTHBY, Edmund Richard.—" Improvements in separating paraffine from its solutions, and in " apparatus therefor."

This invention consists in cooling a solution of paraffine in a vessel of moderate depth, by preference closed, and fitted with agitators and scrapers, which keep the solution constantly stirred and prevent the paraffine from adhering to the sides. By these means the paraffine is obtained in small, distinct, and very uniform crystals, which are very easily drained and pressed.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 6.—N° 40.

GOURDIN, Eugène. — (*Provisional protection only.*)—" Improvements in the modes or methods of " combining a lamp or lighting appliance with a cane or walking stick."

Combination of a lamp with a cane or walking stick. The main feature is that the lamp is partly in the cane and partly in the handle, and the joint of the cane and handle is hermetic. The lamp is secured in a chamber in the cane, and projects above it, so that the handle can be screwed on; an elastic washer is placed between the cane and handle, and the top of the wick tube may come against an elastic button or have a cap fitted thereon. To use the lamp the handle is unscrewed and the wick lighted; or if the handle is a knob it may be hollow & have a spring cover to avoid the unscrewing. Sometimes the chamber in the cane is made deep enough to form a space for matches below the lamp; in this case the lamp may be suspended by a flange.

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* The word "rose" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 6.—Nº 41.

STOKES, Thomas.—(*Provisional protection only.*)—"Improvements in the manufacture of piled fabrics in "imitation of the fleece or fur of animals."

This invention has for its object an improved description and improved means of manufacturing piled or plush fabrics having the appearance of the fleece, hair, or fur of an animal; and consists in attaching by preference the root ends of locks, staples, or tufts of wool, hair, or fur, as cut or taken from the skin of the animal, and without having been previously formed into a thread or yarn.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 6.—Nº 42.

MULHOLLAND, Joseph Richardson Turtle. — (*Provisional protection only.*) — "An improved "construction of 'creel' or bobbin-holder."

The creels or boxes for carrying bobbins or other forms of cops, balls, or rolls of twisted fibres are made with bottoms of wire netting, the wire at the points of intersection being twisted to form pins for the bobbins.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 6.—Nº 43.

COMBE, James.—"Improvements in machinery for winding or balling yarn or other twisted material."

For forming rolls or cylinders of yarn the yarn is wound by surface contact with a horizontal drum or roller, so that the material is wound on at a uniform speed, and the parts that carry the roll are so contrived that when it has attained the required diameter it is lifted out of contact and thereby stopped. The thread guide is made to take hold of the thread or yarn by the action of the traverse, and without requiring any threading through by the attendant.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 6.—Nº 44.

CHAMBERLAIN, Francis.—"Improvements in steam boiler and other furnaces."

My invention relates to steam boilers and other furnaces whereby a more perfect combustion of the fuel and consequently prevention of smoke is effected. I construct my improved furnace on the exterior of the boiler; at the front end of the top of the furnace I place a feeding hopper which extends into the interior of the furnace for the purpose of supplying the fuel continuously thereto, or if desired the fuel may be supplied through the furnace door. The fuel I prefer to employ is small coal, which on coming in contact with the heated air in the furnace is instantly ignited, and the heated products of combustion then passing over a large surface of incandescent fuel, the residue of previously gasified coal, into a heat magazine, placed in the tube of the boiler for the purpose of generating steam or other heating purposes. In order to facilitate the combustion of the fuel I cause air to be admitted into the combustion chamber by means of a regulating valve fitted at the hottest end of the furnace, such air being heated in traversing from the boiler end of the furnace to the front or feeding end thereof, where it passes through perforations into the combustion chamber, the admission of cold air into the combustion chamber tending to keep the arch or crown of the furnace cool whilst at the same time the air is heated before entering the combustion chamber. When desired to increase the draught a jet of steam is admitted into the gases and forces them into the incandescent fuel. By this construction of furnace fire bars are dispensed with, and by constructing the furnace outside the boiler a greater heating surface is obtained than when the furnace is constructed within the tube of the boiler. The heated products of combustion pass into an accumulator composed of fire clay built in the tube of the boiler, which accumulator is quickly raised to a high temperature, the heated currents escaping through perforations direct against the plates of the boiler. An annular space is left between the plates and the accumulator for the purpose of supporting the draught.

In places where space is limited a feeding hopper may be placed in front of the boiler at the lower end, and in front of which hopper a vertical or nearly vertical grate supported above a horizontal plate, a space being left between the bars and the dead plate for the purpose of removing the waste residue from the fuel. Air for supporting combustion passes through the vertical grate and through the incandescent fuel, the hopper being self acting, and the heated products of combustion pass into an accumulator as before described with reference to the first arrangement. The vertical bars may be arranged to turn on hinges to facilitate the cleaning out of the dust from the accumulator.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 6.—Nº 45.

GARDNER, James.—(*Provisional protection only.*)—"Projecting liquids in the form of spray by a draft or "current of air forced through part of the liquid, and an instrument or apparatus for such purpose."

The instrument, which is called an air tube spray producer, consists of an elongated vessel called the phial, and of a narrower tube in the interior of the phial. The phial tapers to a narrow nozzle called the jet, the mouth of which is not entirely closed, but is so narrow that the liquid in the phial can in the absence of atmospheric pressure upon it escape only by drops. The opposite end of the phial, called the bulb, is not closed. In the central part of the phial is a neck and mouth by which the liquids to be used are poured into the phial. A tube open at both ends, called the air tube, is inserted in the interior of the phial leading from the bulb towards the mouth of the jet, and terminating about $\frac{1}{14}$ or $\frac{1}{16}$ of an inch behind the mouth. The air tube is closely fixed to the edge of the bulb so as to make it of one piece with the phial, and close the phial at the bulb, leaving the bulb open as the entrance to the air tube.

The method of using the air tube spray producer is as follows:—Any instrument or appliance for the forcible injection of air is attached to the bulb, and fitted to it so closely as to prevent the air which is injected into the air tube at the bulb from escaping before it enters the air tube. The liquid which is to be projected in the form of spray is put into the phial by its mouth, and in using the invention the phial should be held or placed so that the mouth of the air tube immediately behind the mouth of the jet is covered with the liquid. Air is then forcibly injected into the air tube by the instrument or appliance for the forcible injection of air attached to the bulb as aforesaid, so as to create a draft or current through the air tube, and the effect of this is that the liquid in the phial mixes with the draft or current of air as the latter passes through it between the mouth of the air tube and the mouth of the jet, and is forced out at the mouth of the jet in a continuous stream of spray.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 7.—Nº 46.

HARTLEY, Frederick William.—(*Provisional protection only.*)—"Improvements in optical illusions "used in conjunction with the magic lantern."

This invention has for its object the production of apparent mechanical motion in figures or in objects, or in representations of figures or of objects by the application of the phenakistiscope or analagous contrivance to the magic lantern.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 7.—Nº 47.

MYERS, Edward, and CANNOT, Gustave Adolphe.—(*Provisional protection only.*)—"Improvements "in the permanent way of railways."

This Provisional Specification describes a mode of supporting and fixing the rails in the construction of the permanent way of a rail way.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 7.—Nº 48.

ABEL, Charles Denton.—(*A communication from John Francis Bennett.*)—"An Improved method or "process for removing sulphur, phosphorus, and other impurities from iron, steel, and other metals."

This invention consists in removing the sulphur, phosphorus, and other impurities from iron and steel during their manufacture by the pneumatic process (by which is meant the introduction of air or other gases into the molten metal) by introducing into the converting vessel carbonic acid gas either alone or mixed with other gases, and either subsequent to the introduction of an air blast or together therewith.

The carbonic acid gas may also be employed with advantage in removing sulphur and other impurities from the sulphurets of copper, zinc, nickle, and other metals by passing it as a blast or current through the metals when in a molten state, and it may also be made to act upon the molten iron or other metal in blast furnaces, puddling furnaces, and boiling furnaces.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 7.—Nº 49.

HUTCHINSON, Charles.—(*Provisional protection only.*)—"An improved liquid metre tap."

The novelty in this case consists in causing the liquid as it passes through the tap to flow into a graduated glass chamber or measure which forms part of the said tap.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 7.—N° 50.

ETEY, Stanley.—(*A communication from Jean Charles Carol and Oscar Ollivier.*)—(*Provisional protection refused.*)—" Publication and distribution of certain journals, almanacks, books, papers, &c., which in " themselves form a complete system of business and other advertisements."

By means of card, book, paper, or other printings information of necessary importance is offered in a manner allowing the introduction of certain advertisements, and by distribution much improve and facilitate the publicity of advertisements.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 7.—N° 51.

McEVOY, Henry.—" Improvements in fastenings for drapery, articles of dress, or wearing apparel."

The fastenings hitherto used in connecting drapery (such as curtains) to cornice pole rings have been such as have been considered a necessary disfigurement. I propose in this invention to make such fastenings ornamental as well as useful, and this is new in drapery hooks or fastenings. In applying these fastenings to articles of dress or wearing apparel they are new in those parts which may be considered the fastening parts, but not necessarily new in the ornamental parts.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 7.—N° 52.

MAURY, James.—" Improvements in connecting the ends of metallic straps applied to bales of cotton and " other merchandize."

This invention has for its object a means of connecting the ends of wire, wire strands, or wire rope when applied as bands surrounding bales of merchandise, so as to enable the bands to be removed that they may be rendered available again; and consists, first, in the use of a peculiar knot; secondly, connecting the ends of the straps when on the bale by means of a tie piece formed from a rectangular metal plate, in each of which longitudinal sides there are three cuts. The two centre portions of metal are then turned up from each side towards each other to form a saddle piece, thus leaving a shoulder at each side on each end, which receives the tension of the wire or other band, which passed over the saddles and brought backwards and twisted round itself. In removing the bands it is necessary to cut or divide the tie piece. To obviate this there is a modification by which a pair of solid saddles formed from cast or wrought metal on a plate, one of which studs is formed with a nose piece to prevent the band slipping off it, and the other is fitted with a transverse split pin for the same purpose.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, January 7.—N° 53.

TONGUE, William Thomas. — " Improvements in lamps for burning parafine and other hydrocarbon " oils."

These improvements are chiefly applicable to roof lamps, such as those ordinarily used in lighting railway carriages, and to hand lamps; and consists in carrying the upper end of the supply pipe above the supply reservoir and turning the end down so as to form a syphon, the end of which opens into the oil chamber, and packing or filling the supply tube with lamp wick. The lower end of the supply tube is fitted with a small chamber into which is screwed a flat wick holder which is fitted with a peculiarly formed gallery and wick holder which has a small horizontal platform about three quarters of an inch below the top of the wick tube. The top of the platform carries a small metal arch or bow piece, which bridges over about half an inch above the top of the wick tube, and on the top of which is cut a longitudinal slot a little longer than the wick tube opening. A compound screwed plug is used for filling and regulating the supply of oil to the lamp. This lower chamber is fitted with an overflow pipe, also an air pipe, which extends upwards to a point above the supply chamber on top of the lamp.

The concave reflector it is proposed should be of silvered glass, in one piece, perforated in the centre, and fitted with a metal chimney in the ordinary way.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 7.—N° 54.

GRANVILLE, James.—(*Provisional protection only.*)—" Improvements applicable to lowering boats from " ships' sides in a seaway."

This invention consists of fitting the fore and aft eyes, or ring bolts by which boats are ordinarily suspended, with tongues resembling an ordinary buckle tongue. These tongues are somewhat longer than the diameter of the ring or eye bolt to which they are fitted. A rope or piece of chain, which is somewhat longer than from ring bolt to ring bolt, is carried along the bottom of the boat, through suitable guides, above the keel; the centre of the chain or rope is fitted with a whip or bridle for taking in the slack of the chain, when the two ends have been passed through the eye or ring bolts and over the end of the tongue pieces, when the chain is drawn tight, by means of the whip in the centre of the chain, and made fast to a belaying pin on the centre thwart. The lifting tackle is then hooked into the tongue pieces at each end, when on the boat being elevated, the apparatus is immediately ready for use. Upon being lowered into the water all that is required to disengage the boat is to let go the whip on the centre thwart, which allows the tongue pieces by which the boat is suspended to turn up.

The ends of the chain are then drawn off the ends of the tongue pieces, thus instantly disengaging the boat from the suspending tackle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 7.—N° 55.

SMITH, George. — (*Provisional protection only.*) — " Improvements in apparatus for lubricating " machinery."

This invention consists of a hollow disc perforated on the periphery and mounted on an axle which is hollow at one end, and has lateral openings communicating to the interior of the disc, and is enclosed within a suitable casing to which is fitted a small pipe for conveying the lubricating fluid to the bearing. The excess of lubricating fluid falls into a receiver which is provided with any suitable filtring media, through which it passes, and is conveyed by a small pipe on a supply chamber on the side of the case enclosing the disc, or the supply pipe may be connected directly with the hollow axle of the disc by means of any suitable joint. Upon rotary motion being applied to the disc by any suitable means the lubricating fluid is drawn through the hollow axle into the interior of the disc, and ejected through the openings in the periphery thereof, and thus forced up through the lubricating pipe and so on as long as the apparatus is in motion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 7.—N° 56.

DUNN, Joseph Bragg. — " An improved buckle or tie piece for connecting the ends of metallic straps " applied to bales of cotton and other merchandize."

This invention has for its object an improved buckle or tie piece for connecting the ends of flat metallic straps used in surrounding bales of merchandise, and consists of a square plate of metal; near one edge and a little to one side of the centre there is a longitudinal slot, and parallel to which the plate is cut, and the metal bent down to form a curved tongue piece on the under side of the plate of about half an inch in length on the surface.

In applying it one end of the metallic strap is passed through the rectangular hole some distance, then bent back upon itself. The strap is then applied to the bale with the tongue piece next to the surface thereof. On the press being brought into action, when the required pressure is obtained, the loose end of the bale strap is passed into the lateral slot over the tongue, and brought round the point thereof, and carried under the turn in of the other end of the strap. On the bale being released from pressure the expansion thereof brings tension on to the strap and buckle, and the tongue of the buckle nipping the band prevents it rendering.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 7.—N° 57.

SMYTH, Henry.—" Improvements in umbrellas, parasols, and sunshades."

The invention relates to forming the end of each rib and of each stretcher connected to a " wheel " with cross or T pieces by preference of the form of elongated balls with spherical or conical ends, which are received into grooves or recesses in the " wheels," and are enclosed so as to retain them in position by a screw or other cap, or the ends of the ribs or stretchers may have balls or enlargements with fins or projections received into suitable sockets, or the balls or enlargements may each have a groove or recess to receive a pin or key from the socket. The ends of the stretchers next the ribs are enlarged, where they are received between surfaces from the ribs.

These enlarged parts also have projections which pass through holes in the surfaces, and are there countersunk.

The " runner " is formed with a groove on its inside to run on a fin, which is passed into an undercut in the " stick." A stop in the " runner " acts in a groove or recess in the fin or part of the " stick," and is borne upon by spring acting on a wedge.

The upper " wheel " has a tubular projection tapped on a slightly conical surface, and slit so that a screw cap thereon tends to press the parts of the tube into the " stick," and thus more tightly hold the " wheel " and at the same time to hold the silk or other covering.

The outer surface of the silk or other covering is secured to the ends of the ribs by such covering at those parts being strengthened with leather or other fabric, and having eyelet holes in such fabric or on separate pieces connected by studs, aided if desired by clips.

The ribs and stretchers may be formed of round wire flattened.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, January 7.—N° 58.

AVERY, WILLIAM.—"Improvements in the manufacture of needle cases."

According to this invention the needle cases are either made from two blanks or a single blank of thin sheet metal or alloy. The two blanks from which the case is to be made are of slightly different sizes and have a trough like edge on three of their sides. The smaller blank is inserted by a sliding motion in the larger one by preference, and the two blanks are secured together by pressure so as to form a thin hollow metallic cases open at one end.

The single blank has double the width of the case to be made, one half of it being longer than the other half. The blank is folded at its middle in the direction of its length; its longer sides are then folded upon one another, and the projecting piece at the longer half of the blank is also folded. A flat metal case is thereby formed. A hinged flap may be attached to the open top of the case.

[Printed, 8*d.* Drawing.]

A.D. 1868, January 7.—N° 59.

DAVIES, GEORGE.—(*A communication from William Menorice Arnold.*)—(*Provisional protection only.*)—"Improvements in the mode of combining wrought and cast iron or other metals for various useful "purposes."

This invention relates to improvements in the mode of uniting or combining wrought iron or steel with cast iron or other cast metal for the purpose of constructing ordnance, armour plates, railway wheels, rails, and chairs, or for any other such application wherein great tensile strength, durability, and lightness are required.

A skeleton web or frame work is first constructed of annealed or tempered wrought iron or steel rods, wire, or wire rope (or a combination thereof) in a form corresponding with the form of the article to be made, the said rods, wire or rope (or combination thereof), being so twisted, interlaced, or otherwise arranged, according to the use for which the article is intended, that a tensile and not a transverse strain shall be brought to bear upon it.

The skeleton or framework is then washed with a solution of sal-ammoniac or other mixture ordinarily used for cleaning metal, and then immersed in a molten bath of about two parts of nickel to ten parts of tin (or any other suitable easily fused metal or alloy), so as to coat the same all over with the said metal or alloy.

The skeleton or framework so prepared and coated is now laid in the mould, and the molten cast iron or other metal or alloy of metals is poured therein, and thus a complete union of the wrought and cast metals is effected in the mould.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 7.—N° 60.

WARSOP, GEORGE.—"Improvements in mangles."

This Provisional Specification describes a mangle composed of a sheet of canvas or other material which can be wound on to or unwound from a roller, against the under side of which a spring board is pressed. The board is pressed upwards by eccentrics or arms on an axis which is turned by a lever handle, and when this lever handle is turned in a direction to release the pressure on the spring board it also acts on a clutch to throw the roller out of gear with the hand or fly wheel by which it is turned when the clutch is in gear.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 7.—N° 61.

NORTON, JAMES LEE, and BAILEY, WILLIAM HENRY.—"Improvements in apparatus for indicating "and recording the fluctuations of the pressures and temperatures of liquids and fluids."

This Provisional Specification describes apparatus for recording pressures and temperatures of steam or other fluids. Gauges which indicate the pressure or temperatures by a revolving pointer are employed, and a pinion on the axis of the pointer gives motion to a sliding rack carrying a pencil which is pressed against the periphery of a drum, the axis of the drum being parallel with the sliding rack. Various modes of constructing such gauges are described.

[Printed, 1*s.* Drawing.]

A.D. 1868, January 7.—N° 62.

WARSOP, George.—" Improvements in washing machines."

This Provisional Specification describes a washing machine composed of a hollow box by preference of a rectangular form. The box is mounted on horizontal axes which are eccentric to its ends in order that when the box is oscillated or rotated the clothes or articles in the box, in addition to being rolled over and over, will also fall from one end of the box to the other. The interior of the box is formed with ribs or corrugations which pass around its sides.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 7.—N° 63.

DONISTHORPE, George Edmund.—" Improvements in the construction of and mode of fixing joints, " catches, or other fastenings for brooches and other ornaments and ornamental mountings and fittings " for furniture and articles of vertu."

The invention consists in placing the pins at an angle and forming the joint in two parts.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 7.—N° 64.

SPENCE, Peter.—" Improvements applicable to roasting or calcining copper and other ores containing " sulphur and also regulus, and in apparatus connected therewith."

This invention consists in the application of rakes for stirring disintegrated ore or regulus during the operation of roasting or calcining, the furnace being of that or similar construction for which Letters Patent were granted to the present inventor, dated Novr. 28th, 1861, No. 3002.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 7.—N° 65.

HEYWOOD, Bennett Johns. — (*Provisional protection only*.)—" An improved construction of coffee " roaster."

The operation of coffee roasting is brought under inspection so that the operator may with certainty determine when it is complete by the use of a glass vessel or retort for containing the coffee in which it is submitted to the heat of a spirit lamp.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 66.

GRANT, Maurice.—(*Provisional protection only*.)—" Improved playing cards for the use of short-sighted " and aged persons, as well as for persons of good vision."

Printing or coloring the four suits or series of 13 cards each, called "hearts," "diamonds," "spades," and "clubs," in four distinct colors, shades, or hues; or in one, two, or more colors, and one, two, or more shades or outlines of the same colors; or in gold, silver, bronze, or other substances or materials; or by other modes to give the appearance of a distinct color, shade, or hue to each of the four suits, which four suits have hitherto been made in two colors only.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 67.

TOMLINSON, James.—" Improvements in machinery for twisting and untwisting flax, hemp, and other " fibrous substances."

My invention consists in applying two feed rollers to the flyers of spinning or twisting frames, which rollers are driven by gearing from the flyer and impart a positive twist to the yarn. The same arrangement with the addition of other rollers may be used for untwisting yarns.

Also in supporting the vertical bobbins containing yarn to be untwisted on the bosses of bevel pinions driven by other pinions on line shafts, also in chilling the boss of flyers fitting on the bevel pinions above referred to.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, January 8.—N° 68.

SIMON, Louis.—(*A communication from Albert Emile Reinhardt*.)—A new mode of laying metal leaves on " printed surfaces, and the apparatus connected therewith."

This invention consists of, 1st, the laying of gold, silver, & metal leaves on what is termed endless paper of any length required, instead of placing them in books or paper sheets as is at present done; and, 2ndly. For a machine for transferring such metal leaves on to paper prepared with varnish or other suitable substance.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 8.—N° 69.

GOLDSTEIN, Sigmund.—"Improvements in that portion of gentlemen's attire called the vest or "waistcoat."

The novelty of the invention relates to that portion of gentleman's apparel called the vest or waistcoat, and is designed for the purpose of providing the wearer with a manifold vest; that is, a vest that will enable the wearer to present four distinct fronts of different pattern or material in one garment; and the improvement consists in forming or constructing the garment fourfold or quadruple; that is, that each front exposed or presentable is a duplicate in shape and cut to the back, the attaching hooks, buttons, or buckles being placed up the fronts or sides of the garment as most convenient.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 8.—N° 70.

WALKER, Mowbray, and MONEY, George Henry.—"Improvements in breech-loading small arms, "including pistols, and in the cartridges to be used therewith."

The first part of this invention consists of a gun formed with what we call "a balanced breech," being a bar of metal centred and pivoted on a strong transverse pin or bolt fitting and screwing into and between two parallel shafts or bearings screwed or formed on the barrel, the breech block behind this bolt being curved and tapered to fit in the stock and terminating in a chequered thumb piece to afford motion thereto. An orifice is slotted in the under side of this breech block, and the face thereof bored diagonally into the orifice. A loose pin or striker is fitted into the hole to explode the cap, and force is imparted thereto by a lever mounted on a frame beneath said breech block and parallel shafts, such lever is formed with a hammer head having a claw on the back thereof rising into the orifice in the breech block and striking the loose pin. This lever is actuated by a spring, and a trigger formed with a claw head is mounted on the frame in such a position that when the lever is depressed by the action of the breech block on its transverse bolt the claw head is caught and held by the trigger. The trigger is bolted by a steel pin attached to a chain outside on the stock, and which fits into a hole bored in the trigger web immediately in contact with and outside the trigger plate. The spent cases are ejected by two extractors of a peculiar shape, one portion (the hand) of which lies in grooves cut in the chamber just behind the flange of the cartridge case; the other portions are pivoted on the lock frame before mentioned, from whence proceed cam pieces so arranged that when the face of the breech block is depressed clear of the cartridge case it bears on these cams, imparting motion therefrom to the hands, which throw the case out with a force proportionate to that exerted by the breech block. In another case the cartridge is moved by an ordinary extractor constantly actuated by a spiral or **V** spring.

The second part of this invention consists of a "bolt gun" with the bolt in one solid piece working in the ordinary cylinder or shoe; but the bearing against the recoil, instead of being on the handle of the bolt, which bears a tongue or slot in the shoe as in ordinary, is formed by cutting a slot in the under surface of the bolt itself and a corresponding one in the shoe beneath it, through which rises and works a stout steel block or bolt filling up the two slots and holding the bolt secure; this vertical block is attached to one end of a flat spring lying underneath and fastened at its other end to the shoe; this block is slightly tapered on three sides, and having a curved motion on the fixed end of the spring it also acts as a hammer, the top forward edge when it rises striking a loose pin lying in the axis of the bolt. The trigger is pivoted by the head to the bottom of the block, and works up and down with it through a slit cut in the trigger plate, a tongue being formed in the slit and a notch made on the edge of the trigger, which catches thereon and holds the block down till the trigger is pulled. The extractor is a loose flat bar of steel lying along the top of the bolt and fitting in a groove within the top of the shoe, with a hook at one end for the cartridge case and a flange at the other end fitting in a groove cut round the breech bolt, so that the bolt turns round without the extractor, but draws backwards with it.

The third part of this invention consists also of a bolt gun so constructed as to combine the lock and trigger within the bolt itself and avoid much cutting and fitting into the stock. The bolt which (without any handle) fits in the ordinary slide or shoe and is slotted out centrally for a portion of the rear end leaving two parallel shafts, between which is pivoted by a strong transverse pin or bolt an obtuse angle armed lever, which is called the "latch piece"; the arm in the bolt has a strong hook or catch thereon, which falls and fits into a slot cut beneath in the shoe, and by which is effected the holding or support against the recoil; the other arm is formed to a double thumb piece or comb; a flat spring steel plate is fitted along the top of the bolt over the slotted opening; the forward end is or may be finished, as the "extractor" and the after end is arranged as to form the sear nose, fitting into a notch cut in the body of the lever, which also acts as tumbler. A groove is cut within the top of the shoe for this spring plate to slide. The "latch" descending into the slot in the shoe by the pressure of this spring communicates a blow to the head of a loose pin or striker lying in the axis of the bolt immediately in front of it, thereby firing the charge.

The trigger action is effected by a short loose pin or bar working in a horizontal orifice in the body of the "latch piece" between the "combs," where it terminates in a button head; the other end comes against and partially under the junction of the sear plate and notch, and is bevelled off to form an inclined plane thereto, so that by pressure with the thumb of the right hand on the button head the sear is lifted from the notch and the latch falls, locking the breech bolt and discharging the arm.

Fourthly. Our invention consists in a novel action for firing the charge, i.e., backward by friction instead of forward by percussion. In this case the breech block is pierced centrally for the action of a small rod or pin having a claw on the end thereof to grip the friction pin of the cartridge. This claw pin is actuated by a **V** or bow spring, and moved by a thumb piece outside the block, which is hinged and works on its back joint with the shoe. The draw pin and claw is retained forward by stud communicating from the trigger, which rises behind the **V** spring, preventing its return till the trigger is pulled, when the stud being depressed and the pin and claw flies backward, pulling with it the friction pin of the cartridge and firing the charge. The cartridges are cases of stout brass foil lapped and soldered, one end flanged inward, against which is fitted (inside the case) a combined card and felt wad. Ordinary brass pins are inserted through the centre of the wads, and a bead or small button of metal fixed on the point to prevent its entire withdrawal; the surface of the pin within the case is made rough and a friction patch placed on the felt face of wad, so that when the head of the pin outside is gripped and pulled by the claw of the draw pin the rough surface explodes the patch and fires the charge.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, January 8.—N° 71.

OMMANNEY, Frederick Francis, and SCOTT, Edward.—(*Provisional protection refused.*)—"Improvements in forcing and raising water for feeding boilers and for other similar purposes."

The novelty consists in,—

Exhausting the exhaust steam from the steam cylinder which drives the pump into the water main from the pump to the boiler. Also in delivering the steam from the steam cylinder of the pump into the suction main.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 72.

PONTIFEX, Charles.—"Improvements in presses or apparatus for expressing wort from spent hops, the "same being applicable for expressing fluids from other matters."

This Provisional Specifications describes improvements in arranging and applying a screw (or screws) for obtaining pressure for the purpose of expressing wort or liquor from spent hops or for expressing fluids from other matters.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 8.—N° 73.

BAILEY, William Henry, and LOWTHER, Joseph Wilson.—(*Provisional protection only.*)—"Improvements in lubricating tallow cups."

The features of novelty in this invention consist in the use and application of a valve or valves peculiarly situated in the interior of condensing tallow cups and tallow cups used for lubricating the cylinders of condensing engines, which valves are opened and closed in a novel manner as applied for the purpose.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 74.

BACON, George Washington.—(*Provisional protection only.*)—"Improvements in apparatus for "gymnastic purposes."

This invention consists of several improvements in the details of gymnastic apparatus.

First. The screw hooks which enter a joist or beam in the ceiling pass through disks or roses of india rubber which are held in their places by their elasticity.

Second. The links passing over these hooks are made of a metalic rod bent into a triangle, the ends meeting in the centre of the base, which is fastened into the strap.

Third. Nearly oval metalic armlets are used with a cross bar and wooden roller or handle below the centre, the lower part of the oval being made to turn on the cross bar. Armlets made of ropes passed through tubes are also used, and others made of tubular webbing kept in proper shape by pieces of wood placed inside.

Fourth. An india rubber strap looped at each end is held on rollers; by these elastic loops so as to cross from one armlet to the other for use in certain exercises, and it is also used separately by means of handles turned small near one end to receive the loops.

Fifth. The parts of the apparatus are raised and lowered by means of slide fastenings, the slides of which are made of narrow pieces of metal each bent so as to clasp about three thicknesses of the strap, which is bound or tipped at the end with a doubled flat piece of metal bent nearly at right angles. The strap is placed in the slide, and it is looped up to any required heighth at any time by putting the strap near the end also through this slide, and the loop is firmly secured by drawing it so that the bent metal tip enters the slide. Or the sliding part of this fastening may be made like a flat rectangular buckle without a tongue, but having one or more internal cross bars between which the strap is passed. In this case the end of the strap is tipped with metal as before, except that the tip is very much bent and forms a hook, which hooks into one of the bars of the slide and loops up the strap so that it will not slip. Or when this form of slide is used the hook may be made of a metal rod bent so as to resemble the hooks used for fastening ladies' dresses, the base of this hook being modified to a convenient form for fastening to the strap.

Sixth. In the ends of the trapeze bar rectangular iron links are used, each formed of an iron rod bent so that the ends of the rod meet in the centre of that side of the link which is fastened into the trapeze bar.

Seventh. Provision is made for suspending the apparatus by means of a side frame which is attached to a window or door frame or to a perpendicular wall by suitable fastenings at each side of the frame. This side frame having two converging tie rods to increase its strength projects into the place where the apparatus is to be suspended so far and at such an angle that the extremity of the frame will be at the proper distance and elevation for the suspension of the gymnastic apparatus and the performance of the various exercises.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 75.

GIRDWOOD, ROBERT.—" Improvements in bags for transmitting samples or materials by post or " otherwise."

The invention consists in making the bag of paper or other suitable material with narrow covering folds along one end and one side; in pasting or cementing the end fold completely across; in pasting or cementing the side fold from the closed end to within a short distance of the other end; and in making two folds diagonally at the open end in such a way that the point formed by the first of the two diagonal folds can be inserted and held under the unpasted part of the side fold.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 8.—N° 76.

DAWSON, JOHN, and HOWORTH, JOHN.—" Certain improvements in looms for weaving."

The novelty and feature of the invention consists in the adaptation and application of a novel arrangement of gearing, vibrating slotted bar and tension bar, by which means the cloth is taken at once on to the cloth roller, and an even and uniform "pick" throughout the entire piece is simultaneously effected, and also in giving motion to the ordinary train of gearing, actuating the cloth roller by such said arrangement of gearing and slotted vibrating bar.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 8.—N° 77.

BENJAMIN, SAMUEL.—(*A communication from William Benjamin.*)—(*Provisional protection only.*)— " Improvements in receptacles for coin or other valuable articles."

The receptacle is provided with moveable blocks operated by keys, slides, or finger pieces, one to each block, and on each block rests a bar or rod called by the applicant a "bit," and raised and lowered by the motion of the blocks. When raised they engage in a socket and fasten the receptacle. According to the position of the blocks some of them will raise their bits and others depress them, when actuated by their respective keys or slides. Therefore when some of the blocks are disposed beforehand, so that their bits will be raised, and others so that their bits will be lowered, the unfastening cannot be performed by any one who does not know which slides to actuate. The attempt to open the receptacle when the proper bits are not depressed causes a tongue on an arm raised by the bits to strike a bell gong or alarm. An arrangement is described in which blocks are used having two bevelled or sloping upper sides and a straight base, in which base at a distance from the centre of its length is an orifice; thus part of the base is of greater length on one side of the orifice than on the other. Each orifice engages a pin or stud on a key or slide operated from the outside. The bits are bevelled at bottom and grooved at top. The blocks whose bits are to be raised are turned endwise, so as to bring the longer part of the base towards the front, the other locks having their shorter part towards the front. The bits to be raised are placed with their bevels in ifferent direction to the others. The raised bits take into a socket with hinged or spring flap. An arm on hinged piece carrying a tongue for sounding the alarm passes along the grooves of the raised bits. The erson who knows which bits are raised can readily open the receptacle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 78.

KENWORTHY, William Edward.—(*Provisional protection only.*)—"An improved method of purifying "drains and sewers."

The invention consists in placing drains and sewers in communication with furnaces of steam boilers in such manner that the noxious gases may be caused to pass through pipes from the said drains or sewers by the natural draught of the fires into the furnaces whereby to effect their complete combustion; any remaining gases are at once absorbed by the carbon contained in the flues of said boilers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 79.

NEWTON, William Edward.—(*A communication from Charles M. O'Hara.*)—"An improved mode of "propelling vessels."

This invention consists of a combination of a horizontal engine with an improved propeller, which is of sector form, and may comprise a greater or less portion of a circle. This propeller is adjusted on a horizontal axis in a trunk or chamber at the stern of a vessel, or if preferable one propeller can be placed at each side thereof.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 8.—N° 80.

GREENWOOD, Thomas.—(*A communication from Auguste Veillon.*)—"Improvements in machinery "for preparing to be spun silk, China grass, and other similar fibrous substances."

In place of the ordinary retaining rollers a "rotary gill" or "porcupine roller" is placed immediately behind the fallers of screw gill, spreading, drawing, and roving frames.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 8.—N° 81.

PETRIE, John, junior.—"Improvements in 'brats' or travelling surfaces for conveying wool and other "fibrous materials out of or into washing machines, which improvements are also applicable to other "machines in which similar travelling surfaces are required."

This invention relates to a method of constructing and jointing together ribs in order to form a continuous travelling surface. For this purpose tubes half round metal or rods are hinged together by links capable of being removed endwise.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 8.—N° 82.

TUCKER, John.—(*Provisional protection only.*)—"Improvements in dressing fabrics and yarns."

According to this Provisional Specification fabrics and yarns are dressed with rice prepared by treating it with soda to extract the gluten, then washing the grain and grinding it in a wet state; afterwards whilst still wet the prepared rice paste is boiled, and so applied to the fabrics or yarns.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 83.

TUCKER, John.—(*Provisional protection only.*)—"Improvements in the manufacture of paper."

According to this Provisional Specification there is mixed with the paper pulp rice which has been treated with soda to extract the gluten, then washed, ground in a wet state, and then at once boiled and mixed with the pulp.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 8.—N° 84.

LAKE, William Robert.—(*A communication from John Whitworth, William Whitworth, and Alexander Bold Halliwell.*)—"Improvements in cutters for forming wood mouldings and for other like purposes."

These improvements relate to making such cutters of chilled cast iron, the form or configuration of the same being varied to suit the nature of the work. The cutters are cast in chills and then ground on suitable stones and emery wheels. The cutting edges are so formed that the chips produced are thrown to one side of the work, and the sharpening of the said edges may be effected by grinding the angle of the same. The cutters can be cast in segments, which are united in any convenient and suitable manner.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 9.—N° 85.

KING, Charles Joseph Berry.—(*Provisional protection only*.)—" An improved process to be employed " in the tanning of skins or hides."

This invention consists in the employment of decomposed blood for removing the hair from skins or hides to be tanned.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 9.—N° 86.

NEWMAN, Charles Henry.—(*Provisional protection only*.)—" Improvements in the manufacture of " unfermented and unintoxicating malt liquors."

According to this invention the extract of the hop is prepared separately from the malt in a close covered vessel in order to procure the aroma, the bitter, and the astringent qualities. The malt extract is produced by four mashes and fined down with isinglass, strained and cooled down in bottles. The proportions are 10 pounds of hops, 20 pounds sugar, 1 quarter malt to make 100 gallons. By these means an unfermented malt liquor is produced.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 9.—N° 87.

ARCHIBALD, Samuel George.—" An improved mode of preparing tablets, paper, and other surfaces " for receiving writing."

To enable persons by the sense of touch to write and make legible memoranda in the dark or by an indifferent or feeble light, raised parallel lines are formed on the writing surfaces, by which means the writer will be guided straight across the page, and also from the top to the bottom of the page, in regular order without the risk of confusing his writing by running the lines one into the other.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 9.—N° 88.

HEATH, George Arthur.—(*Provisional protection only*.)—" Improvements in sash fastenings."

This sash fastener consists of a double bolt mounted in a slotted plate applied in the pulley stile at the side of the window frame so as to lock both sashes. The double bolt is connected to one end of a lever mounted on a fulcrum, the other end being connected to a stem and hand knob at right angles. The bolts are shot into the sashes by pressing in the hand knob, and are secured in such position by a catch formed on the under side of the stem abutting against a plate fixed to the bead, through which said stem passes, a spring being applied to keep it secure and prevent the bolt from being unlocked from the outside.

To release the bolts from the sashes the stem is slightly raised and then pulled outwards, withdrawing the bolts within the pulley stile. In order to prevent window sashes from rattling, I slightly bevil the inner side of each bolt so as wedge the sashes together when locked, as before described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 9.—N° 89.

WINDER, Richard.—" A new folding machine for folding sheep, and in making temporary enclosures in " place of hurdles, nettings, and other plans."

My invention consists in a means of folding sheep, and in making temporary inclosures in place of hurdles, netting, and other plans now adopted.

The plan adopted in my invention is to roll and unroll flexible netting made of wire, string, cocoa fibre, or of any other material and thus form the inclosure.

The following is the general description of my invention :—A frame to support the roller and other parts of the machine is fixed upon wheels which run along the ground when the netting is being rolled or unrolled, or when the machine is taken from place to place or from field to field; on this frame is fixed a vertical roller of a length equal to the height of the netting, around which roller the netting is rolled and unrolled, according as the netting is required to be run out or taken in. Motion is given to this vertical roller by cog wheels of different diameters fixed underneath or above the frame, the small cog wheel for simplicity is turned by a horizontal fly wheel with a handle fixed thereon for the man to turn by; if preferred, a pair of bevil wheels can be substituted so as to alter the motion from the horizontal to the vertical. A guide frame is also attached to the above mentioned frame for leading the netting straight and even upon the vertical roller or off it; the selvage rope or wire being of a larger diameter than the material the netting is made of, passes over a grooved pulley which is split or separated into two parts; these two halves or parts are fixed at a distance apart to let the netting pass between them, and as this split pulley is fixed at the height of the netting it leads it evenly on and off the vertical roller. A horizontal roller is fixed at one end of the frame, upon which the lower part of the netting is made to pass when being run out or taken in. Light right angled triangular frames made of wood or iron are to be fixed at about six feet apart to keep the netting up and in place that forms the fold.

Corner posts to fix at the angles of the fold are made of iron or wood properly stayed and fixed to bear any strain put upon the netting. These corner posts, as well as all other parts of the invention, will be more particularly described by drawings and accompanying description in the final Specification.

Part of my invention consists also in the use of a horizontal roller instead of the vertical roller above described for winding the netting upon or unwinding the netting off it; this alternative plan will also be shewn more in detail by drawings and description in the Final Specification.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 9.—N° 90.

McMULLEN, Osmond Henry.—" An improved mashing machine."

The novelty consists in the form and peculiar action of the masher, which is made with a hollow rotating shaft carrying a circular or segmental inclined plate or plates having slots or openings therein and the inclination diminished towards the bottom of the mash vessel in which the masher rotates vertically. The masher is turned in the opposite direction to the "pitch" of the plates and thus acts upon the grist as a heater and sifter.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 10.—N° 91.

VIVEZ, Joseph.—(*Provisional protection only.*)—" Improvements in the construction of lamps for burning " volatile hydrocarbons and other mineral essences or compounds."

The construction of lamps for burning volatile hydrocarbons and other mineral essences or compounds so that perfect combustion of the hydrocarbon or other compound used in the production of light may be effected and a pure, bright, and steady flame obtained without emitting either smoke or smell or being liable to explosion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 10.—N° 92.

LEWTAS, Joseph.—" Improved apparatus for holding and releasing the cords of Venetian and other " blinds."

To the framework surrounding the Venetian or other blind I attach a small frame having two stationary rods or wires, one for carrying three pulleys or rollers and another for carrying two levers or catches. The double cord used for raising or lowering the blind passes over two pulleys and over the two levers, and over the third pulley is passed a single cord and connected to a cranked wire jointed to the levers.

When the single cord is loose the double cord can be pulley in either direction and raise or lower the blind, and when the single cord is pulled the cranked wire turns the levers so that their ends press the double cord against the top of the small frame, thereby effectually holding the cord and preventing any change of the blind. When the blind has to be raised or lowered the single cord is loose and the double cord pulled so as to turn back the levers for removing the bite and give freedom to the said double cord.

When required I reverse the positions of the levers so that they turn downwards to press the double cord against a bottom plate of the small frame.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 10.—N° 93.

GLEW, John Henry.—" Improvements in the manufacture of boots, shoes, and gaiters."

The novelty consists in,—

Firstly. Forming part of the heel of boots and shoes of a composition of gutta percha or other suitable material.

Secondly. In forming in the side of the boot or shoe an elastic fastening in which are placed the button holes.

Thirdly. In gaiters or leggings elastic button holes are inserted in a piece of leather or other suitable material.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 10.—Nº 94.

MORTIMER, Samuel.—(*Provisional protection only.*)—" Improvements in machinery for combing wool " or other fibrous substances."

The novelty consists in,—

Mounting the arms (which carry the nippers) upon a rocking shaft placed under the tappet shaft, and in forming slot-holes in the said arms to span the said tappet shaft and allow for the oscillation of the arms. Also in applying a support intermediately to the tappet shafts.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 10.—Nº 95.

FAWCETT, John.—(*Provisional protection only.*)—" An improved manufacture of cattle food."

Drying brewers' grains, grinding them into meal, steaming, and then pressing the meal into cakes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 10.—Nº 96.

ROWAN, John Martin.—(*A communication from Josef Ritter Von Stummer-Traunfels.*) — (*Provisional protection only.*)—" Improvements in the manufacture of artificial fuel."

This invention relates to the utilisation of small coal or coal dust and other materials in the manufacture of artificial fuel; and the improvements in which it consists are chiefly carried out by employing more suitable and efficient cementing compounds than have been hitherto used for binding together and properly agglomerating the loose particles in order to form blocks. The cementing compounds consist of any farinaceous, amylaceous, or glutinous vegetable matters, such as plants or parts of plants containing such matters, or the more or less manufactured products of such plants, and particularly damaged materials unsuitable for food or for use otherwise, combined with any woody or other fibrous vegetable materials that can be conveniently obtained at a low cost.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 10.—Nº 97.

DAVIES, George. — (*A communication from Antoine Edouard Brisbart-Gobert.*)—(*Provisional protection only.*)—" An improved self-supplying pen."

The fundamental principle of this invention consists in the application of a physical effect, whereby a tube plunged into water and then withdrawn and closed hermetically is caused to retain in suspension all the liquid introduced, which can only escape in proportion as air is allowed to enter.

The pen is composed principally of a tube of metal or other suitable material, the upper end of which is closed by a movable stopper, in the centre of which is a valve which may be opened and closed from time to time as may be required to admit a small portion of air above the ink. Inside the tube are fixed two or more discs or partitions, having only one small hole in each, the said holes being eccentric as regards each other, that is to say, not one over the other.

The lower end of the tube has a short piece of smaller tube inserted therein, which passes down partly inside the nib, and in the side of which is a small hole through which the ink can flow in a small quantity at a time to the inside of the nib.

Inside this smaller tube is fitted a movable plug which is solid at each end, but is partly cut away at back and front so as to leave a kind of mid-feather through which there is a small opening for the ink corresponding with the opening in the side of the tube.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 10.—Nº 98.

TONGUE, John Garrett.—(*A communication from Henry Graham Thompson.*)—" Improvements in " apparatus for sewing the backs of books for the purpose of binding the series of numbers or separate " sections of a book or volume together."

This invention has for its object the arrangement of mechanism or apparatus suitable for sewing the backs of books in order to bind the series of numbers or separate sections of the book together in place of sewing them by hand with a needle and thread as ordinarily practised.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, January 11.—Nº 99.

COCHRANE, Henry.—" Improvements in machinery or apparatus for making moulds for hollow and other castings and for testing or proving hollow castings."

One part of this invention has reference to improved machinery for making moulds for castings, and consists mainly in ramming in the sand into the mould box by a series of mechanical rammers acting consecutively upon a fresh charge of sand introduced after the action of each rammer, the forms of which rammers vary from a configuration approximating to that of the pattern for the first rammer, to that of a plane surface for the last rammer, the object being that the sand shall be effectually rammed by degrees into every space of the box as the latter fills up. In one arrangement for carrying this system into practice, a frame carrying two or more sets of rammers slides up and down between guides, a different set of rammers thereon being made at each down stroke to enter the mould box situated underneath them, while at each up stroke the rammer frame is made to perform part of a revolution, so as to change the position of the rammers by a roller or stud upon the frame coming in contact with a stop on the guides. A spring catch is provided holding the rammers in position during their descent.

The motion of the rammer frame is effected either by rotating cams acting upon rocking levers connected to the rammer frame, or by means of a steam or water power cylinder connected either to such rocking levers or directly to the rammer frame. Two or more tables are provided, carrying each a mould box, which as the ramming of one mould box is completed are made to travel sideways so as to bring another mould box under the rammers. To facilitate such motion, a carriage is provided under the tables, which as these require to be shifted is caused to raise them slightly off the bed on which they rest, and to travel with them into the required position.

Another part of the invention has reference to the testing or proving of pipes and other similar hollow castings, and consists in inserting into the pipe or other object a core so formed as to leave only a small annular space between it and the sides of the casting, into which space the water is forced. The ends of such annular space are closed by rings or bonnets forced against the pipe by a screw spindle carried by the core. In one arrangement the core is fixed to and projects horizontally from an upright shield, against the surface of which the one end of the pipe placed on the core is pressed by the action of the before mentioned screw spindle acting on the bonnet closing the annular opening at the other end. The bonnet is suspended by chains and balance weights from an overhead traveller so as to be drawn off the core and raised up out of the way for putting the pipe on or taking it off the core.

[Printed, 2*s*. Drawings.]

A.D. 1868, January 11.—N° 100.

CHAMPNESS, William.—(*Provisional protection only.*)—" Improvements in the method of ornamenting " wearing apparel termed stays and corsets or riding belts."

The novelty and feature of the invention consists in applying to the seam or other part a covering of thin metal or bronze powder and passing over such surface a heated metal roller bearing a design or device in " relievo," so that such design is transferred to the seam or the fabric.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 11.—N° 101.

LEMON, Campbell Sweeney.—" Improvements in shirt fronts and other similar garments."

This invention has for its object an improved method whereby both front bands of the shirt are made alike and can be reversed and used alternately in front at pleasure, the same being held in position by studs at the neck, breast, and bottom of the bands.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 11.—N° 102.

BUDENBERG, Arnold.—(*A communication from Carl Mund.*)—" Improvements in steam hammers."

The steam acts in a cylinder direct on the ram or plunger forming the striking weight to which the hammer head or striking face is attached for effecting the blow. The ram with the hammer head or face is lifted by the steam acting on a piston in a separate cylinder, and the piston rod of this piston is connected to the ram by a kind of ball joint, or joint admitting of play, and india rubber or other elastic substance in the connecting parts may be applied to reduce the force of the shock.

The end of the ram acted on by the steam is made tight by packing or otherwise.

The passages for the steam to act on the ram or plunger for the blow, and on the piston for the lift, are connected by lever and links to be worked together.

[Printed, 1*s*. Drawings.]

A.D. 1868, January 11.—N° 103.

PILLING, James, and SCAIFE, Robert.—" Certain improvements in machinery or apparatus to be " employed in spinning, twisting, or doubling cotton, silk, or other fibrous substances."

The novelty and feature of this invention consists in the employment and use of a flyer mounted on a short spindle which revolves within a hollow spindle by the tension or pull of the yarn or thread on the bobbin, which is connected to and positively driven by a wharf or pulley attached to a bush extending through the bobbin and rotating upon the outside of the said hollow spindle.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 11.—N° 104.

HIRST, Joseph, and HIRST, Wright.—(*Provisional protection only.*)—" Improved machinery to be " employed in the manufacture of clog soles and patten boards."

This invention consists in the use of a travelling revolving knife which by means of curvilinear surfaces on which wheels carrying the supports and shaft of the knife run causes the said knife to rise and fall in its passage through the block and reduces such block to the form required. Revolving cutters are employed for rounding the toes and heels of the sole and boards: the rabbet or groove therein is cut by a revolving cutter on an upright shaft.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 11.—N° 105.

SOMERVELL, John.—(*Provisional protection only.*)—" An improved method of obtaining and preserving " alimentary substances in a highly concentrated form."

This invention consists in an admixture of gelatine with essences or extracts of fish, flesh, fowl, or other nutritious aliment.

The gelatine is dissolved by heat, the extract or essence added together with suitable seasoning condiments, and the mixture is then evaporated to the required strength.

The alimentary product thus obtained may be used either in solution, as a jelly by allowing the solution to cool, or in the desiccated state in which it is left after the evaporation, when it may be sucked as a lozenge.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 11.—N° 106.

HOOPER, William Williams.—" Improvements in apparatus for giving signals on board ship or other " places."

This consists, 1, in combining pneumatic apparatus and words, letters, or signs with racks, pinions, and shutters, or their equivalent. The pneumatic apparatus consists of a transmitting apparatus and a receiving apparatus. The transmitting apparatus consists of several air chambers with rods; these rods when driven home force force the air through tubes leading to the receiving apparatus, which consists of several elastic chambers connected by the tubes with the corresponding chambers of the transmitting apparatus. The air forced into one of the receiving chambers expands it, and a rack connected to the lable acts on a pinion on which a shutter is pivoted, which being moved discloses a sign and at the same time sounds an alarum if desired. The rod forced home is held by a spring and released by a chain when another rod is acted upon.

This arrangement admits of modification, 2, in means of balancing and regulating the action of the pointer in the indicating instrument. A resistance box or chamber is interposed between the transmitting apparatus and its indicating instrument, which box contains perforated diaphragms, plates, or discs at regulated distances apart. The air forced through the tubing has to pass through these plates before reaching the indicating instrument, and the passage of the air is thus impeded.

3. In means of communicating from the rudder or engine to the bridge. An appliance connected to the rudder or engine, as the case may be, acts on an air chamber when the position of the rudder or movement of the engine is changed, and the air is forced through a tube to an elastic chamber at the bridge, a rod leading from the chamber acts on another rod connected thereto; this second rod turns on a pivot and moves a pointer forming a prolongation thereof, the pointer being within view of the captain. The air chamber for return signals may be worked by hand.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 11.—N° 107.

ELLISON, James Charles.—(*Provisional protection only.*)—"Improvements in machinery for folding "fabrics and also for inserting papers, metallic plates, or other suitable substances between the folds of "fabrics for pressing."

The novelty consists in,—

Applying and combining further improvements in machinery or apparatus for which Provisional Protection was granted to me on the 2nd day of January 1867, No. 12, where instead of the moveable box or receptacle which is therein described as divided into two compartments, I now employ a carriage of four compartments, each of suitable size and form to hold the papers, metallic plates, or other substances to be inserted betwixt the folds of fabrics required to be pressed.

The intermediate compartments are open at both top and bottom, and the end compartments are open at top and have each a moveable bottom or platform mounted by preference on a screw capable of turning in a nut attached to the said carriage, by the reciprocation of which the said bottoms are raised so as to deliver a paper or plate to one of the intermediate compartments at each stroke, which is thereby deposited on the fabric as it is folded on the folding table.

For folding only these compartments are suitably formed to contain a quantity of rods or bars and actuated to deliver them in succession into the folds of the fabric.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 11.—N° 108.

HODGSON, Nathan.—(*Provisional protection only.*)—"Improvements in engines to be worked by water "pressure, compressed air, or other elastic fluid."

The invention relates to improvements upon an invention for which Letters Patent were granted to Anthony Bernhard Baron von Rathen on the 23rd March 1865 (No. 818).

The engine described in the Specification of the above mentioned Letters Patent consists of a case in which a wheel or centre piece revolves by the action of the motor on the ends of chambers in which the motor is confined.

The pressure of the motor in the opposite direction being counterbalanced or neutralized by being transmitted through certain mechanism in a direct line to the axis. This mechanism according to the invention above referred to consists of loose pieces having somewhat the form of a triangle or parallelogram, which are received in suitable spaces formed for them in the wheel, but are immoveable therein. Now the present invention consists in mounting such loose pieces upon centres of motion, upon which they are capable of oscillating, and the spaces in which such pieces are placed are formed in such a manner that the triangular or other shaped pieces are free to oscillate therein without exerting any pressure except upon their axes of motion, and thence in a direct line to the axis of the wheel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 11.—N° 109.

TONGUE, John Garrett.—(*A communication from Henry Graham Thompson.*) —"Improvements in "machinery or apparatus for sizing the backs of carpets and other pile fabrics."

This invention has for its object improvements in the arrangement and construction of machinery suitable for applying size to the backs of terry and cut pile carpets and other pile fabrics.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, January 11.—N° 110.

YOUNG, William Denoon.—(*Provisional protection only.*)—"Improvements in wedging and fastening "fences and other similar structures."

The feature of novelty which constitutes this invention is the formation of a wedge which has two wedging or securing sides which simultaneously act both vertically and horizontally upon the bars passing through the holes into which they are secured. By this means the various parts of fences, hurdles, gates, and other structures are much more securely held together than by wedges as hitherto employed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 11.—N° 111.

JOHNSON, John Henry.—(*A communication from Thomas Monro Hammond.*)—"Improvements in pipes "for smoking."

This invention has relation to the employment of a new material for the construction of pipe bowls or pipes, and consists in the employment of carbon, vegetable matter, such as peat, or mixtures of the same, in conjunction with pitch, bitumen, asphalte, resin, or gum, which materials after having been reduced to a fine state of division are moulded in suitable metallic or other moulds by pressure, hydraulic or otherwise, with the employment of the requisite degree of heat so as to soften the agglutinating material and render the mass coherent; the moulded forms are then placed in an iron or suitable box and carbonised, and the pipe bowls or pipes are then ready for use.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 11.—N° 112.

WHITWELL, Thomas.—" Improvements in furnaces."

This invention relates to certain improvements which are applicable to several varieties of furnaces, but particularly to such as are used for puddling, boiling, and heating iron and other purposes. In carrying out this invention I construct the flue neck of the furnace with a frame of cast iron or other suitable material, through which I cause water to flow by any well known contrivance, and which I regulate in any convenient manner as, for instance, by constructing pipes of any suitable material (I prefer wrought iron) within the cast iron frame as aforesaid, and regulating the supply of water to the same by a valve or tap. This frame is placed in the neck or flue of the furnace in a convenient position. The waste gases of the furnace pass through the same, and regularity in the consumption of fuel is thereby effected; as, for example, the gauge or proper area of the flue neck of a furnace having been fixed, the opening in the frame aforesaid is made of the same or suitable area, and the frame being kept cool by the circulation of the water, the gauge aforesaid will not be varied by the action of the waste gases, and the cousumption of fuel will be equalized for a considerable period. If found desirable bricks or other refractory material may be placed on the lower part of the frame where it is exposed to the action of the waste gases, and the whole of the inside of the frame may be lined with bricks or other refractory material. The flue neck may also be constructed of fire clay or other suitable material bedding the water pipes therein, or a coil of water pipes may be constructed as aforesaid and built within the coil bricks or other suitable material to the gauge required, or a lump of fire clay or other suitable material may be surrounded with a coil of pipes as aforesaid with water circulating through them for the purpose of preserving the gauge or proper area of the neck or flue as aforesaid. In all cases the supply of water may be regulated by a valve or tap.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 11.—N° 113.

IRELAND, George.—" Improvements in cruet frames, liquor frames, and other frames for holding bottles " and vessels and other articles."

One part of this invention consists in making the feet of cruet and other frames out of the same piece of sheet metal as the base of the frame, so as to avoid the necessity for soldering the feet to the base.

Another part consists in making the handles of cruet and other frames of two, three, or more parts situated in vertical planes inclined to one another.

Another part consists in making the stems or supports of the handles of one, two, or more parts situated in vertical planes inclined to one another instead of making the stems or supports of a tubular or columnar figure. The parts of the stem or support join each other at top, where they are connected to the handle and widen downwards toward their lower ends, where they join the base plate of the frame.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 11.—N° 114.

ELLIN, Thomas Skevington. — (*A communication from John Forbes.*)—" An improved self-securing " skate."

The novelty in this case consists in fitting expanding and contracting sole and heel clips worked simultaneously by a self fixing spring lever to the runner, and in fixing the same to the runner by means of slotted button headed screws, by turning which the parts can be instantly separated one from the other.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 13.—N° 115.

HAMILTON, Milton Alexander.—(*Provisional protection only.*)—" An improved device for holding " pens, pencils, papers, and other articles."

My invention relates to a device wherein the pens, pencils, or other articles are held between the coils of a spiral spring; and the said invention consists chiefly in the peculiar mode of connecting the said spring with a frame or back whereby the spring is securely held in its position on the frame, while the coils of the spring are free to grasp any object placed between them. The frame is provided with a longitudinal rod or bar, which is passed through the spring just inside the coils, and is secured at each end to the frame or back. I prefer also to secure the ends of the spring to the said frame or back.

[Printed, 4d. No Drawings.]

A.D. 1868, January 13.—N° 116.

PITTAR, Parke.—"Improvements in mineral and rock drilling apparatus."

The novelty of this invention consists in the application and arrangement of various mechanical appliances for working the drill used in perforating rocks or mineral substances for blasting or other purposes.

[Printed, 8d. Drawing.]

A.D. 1868, January 13.—N° 117.

KIRBY, John Malsbury.—(*Provisional protection only.*)—"Improvements in the means of and apparatus "for generating steam and warming buildings."

According to this invention the generator for steam engines is formed of a cast iron receptacle of an oval or egg form set in masonry, and supported by a flange, a cover, and bolts and screws; the furnace space surrounds the generator, and the products of combustion are carried off by a flue near the top of the generator. An injection pipe from a reservoir forces water into the generator from a rose head, thus distributing it over the internal surface of the generator, and causing it to be instantly converted into steam.

The generator for warming buildings is of a shallow square form, and in each case a steam pipe is provided to carry the steam to the engine, or to a series of pipes in a building.

[Printed, 4d. No Drawings.]

A.D. 1868, January 13.—N° 118.

FIRTH, William.—"Improvements in valves made from india rubber or other similar elastic material, "the said valves being applicable in the construction of fluid or gaseous pumps, enemas, syringes, spray "producers, and other instruments where valves are in use."

The invention consists, first, of valves made from a solid cylinder of india rubber by cutting out a core the greater part of its length, and forming a clack at the closed end of the cylinder by cutting through the greater portion of the diameter thereof and leaving a portion to act as a hinge for the clack.

The invention consists, secondly, of valves made from a hollow cylinder with one end closed, but with a number of openings which form outlets for the gas or fluid when opened by the pressure of the gas or fluid on the closed end of the cylinder.

The invention consists, thirdly, in making valves similar to those last described out of hollow cones instead of cylinders.

The invention consists, fourthly, in making cylindrical valves out of a series of rings of hard and soft india rubber alternately with openings cut in them.

And the invention consists, lastly, in making valves by cutting the aforesaid cylinders and cones into rings or putting rings together and joining such rings at intervals.

[Printed, 10d. Drawing.]

A.D. 1868, January 13.—N° 119.

WATKINS, Charles Adolphus.—(*Provisional protection only.*)—"Improvements in the manufacture "of ties for painting and other brushes."

By this invention painters are saved the trouble of tying up their brushes, and the tie being made to fit each brush it is more likely to work properly than when tied by hand. The novelty consists in making the tie in a transportable and marketable condition, which has never been done before.

[Printed, 4d. No Drawings.]

A.D. 1868, January 14.—N° 120.

WOOD, Thomas.—(*Provisional protection only.*)—"Improvements in the construction of railway "carriages, and in the method of coupling the same, as also in the method of and apparatus for signalling "between passengers, guards, and engine-drivers of trains, and officials and others at stations and other places."

The carriage is divided into seven compartments, namely, a saloon, which occupies the centre or middle portion, accommodating fourteen passengers. This saloon opens out by a central passage at each end into two other compartments, which are supplied with side-doors, by which passengers enter the carriage; these compartments will each accommodate eight passengers; throughout the carriage, longitudinally, a passage is constructed, at the extreme end of this passage, on the left, a ladies' compartment is provided that will accommodate four persons; opposite this compartment on the other side of the passage a ladies' retiring room is provided; at the opposite end of the carriage two similar compartments are constructed, one as a smoking and the other as a retiring compartment for gentlemen; a glass door is provided through which the guard of the train alone is allowed to enter; a mirror in the guard's box is so arranged that the entire length of the compartments of the train are reflected therein.

A second part of the invention relates to a novel arrangement of apparatus whereby the passengers may communicate with the guard in cases of great necessity, and the improvements consist in connecting tassels or handles projecting from the roof of the carriage at short distances from each other over the heads of the passengers with a chain or cord running over bowls inside the ventilator; these chains are connected with a lever and spring at each end of the carriage, which are connected to a frame containing a red glass; near to this is a lamp with a powerful reflector, the front of the lamp, throwing out a white light, and the back a red one. The communicating cord in the ventilator in connection with the lever and spring actuating the light is also connected by the separate chains or cords with secret bolts placed inside the framework of each door, thus when the handle or tassel is pulled it simultaneously throws a red glaring light along the length of the train against the reflector before mentioned in the guard's van, and also actuates the secret bolt of the carriage door from which the alarm has been communicated so as to lock such door.

Tubes containing signal rockets are applied in the guard's van, so as to signal to other trains or stations any accident that may occur. Lastly, my invention relates to a novel arrangement of self acting coupling for connecting one carriage with the other, and consists in connecting the coupling gear with four bars which embrace the ordinary draw bar; these bars and draw bar projecting from the end of the carriage are connected together by means of a plate, the opposite ends of the four bars being connected to a volute spring situated between the headstock and cross bars of the carriage.

The shackle of the draw bar rests upon the iron ribs, and is provided with a projecting piece, behind which an iron plate or trigger is provided, so that when the hook of one carriage advances and touches the shackle of the next carriage, it rises over the top of the hook, the nose of which strikes the trigger and forces the shackle down upon the hook, thus effecting the coupling.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 14.—N° 121.

GEDGE, William Edward.—(*A communication from Benoit-Dulin.*)—"Improvements in the construction of breech-loading fire-arms."

This invention is based upon the principle of opening and closing the breech of the fire arm by sliding the barrel or barrels horizontally to and fro on a carriage of a peculiar construction attached to the stock catches attached to the breech bearing plate retain the remains of the cartridge case after the discharge; the arm is locked by a particular arrangement of tenon lever and springs, and a false breech with pivoting nipple is provided for converting the arm into a muzzle loader if required.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, January 14.—N° 122.

ABEL, Charles Denton.—(*A communication from Eugéne Paraf Javal and Mathias Paraf Javal.*)—(*Provisional protection only.*)—"Improvements in the treatment of woven fabrics for improving the appearance thereof."

This invention has for its object to improve the appearance of woven fabrics of a coarse and irregular texture by disguising the defects thereof, and consists in first printing upon them with metallic or other colours small and irregular patterns, such as "granite" or small regular patterns made to intersect each other, and then producing upon the fabrics a watered, glazed, grained, goffered, or corrugated surface, or a combination of such appearances. The fabric may or may not be previously bleached or dyed; it may also be printed upon with flock, leather, cork, or other similar powders to vary the appearance thereof, and it may be treated on one or on both sides. The fabric so treated is principally applicable as linings or coverings.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 14.—N° 123.

LEWIS, Charles William.—(*A communication from H. G. Julian.*)—(*Provisional protection only.*)—"An improved spirit level."

The object of this invention is to construct a spirit level in such a manner that it will show either a base perpendicular or any degree between the base and perpendicular at the option of the operator.

In constructing a spirit level according to my invention I place on or affix in any suitable way to the base line in a perpendicular position a circular dial marked with the degrees of the circle. Behind this dial plate is affixed a circular piece of glass, through which the movements of the spirit are distinctly seen, shewing the angles or degrees.

The degrees on the dial plate being marked from right to left and from left to right, commencing at 0 and running to 90, are so placed that the level is found when the spirit marks 0, and when it marks 90 the perpendicular is shewn.

The intermediate degrees or angles are found when the spirit marks between either of these points. The cavity behind the glass is partly filled with spirits of wine or any other suitable liquid. In the manufacture of my improved spirit level I use brass or any other suitable material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 14.—N° 124.

COWLING, Alfred, and TURNER, William.—(*Provisional protection only.*)—" An improvement in " the construction or ornamentation of tape measure cases."

According to this invention the cases to contain tape measures, which are coiled or wound on a spindle in circular boxes or cases, are pierced or stamped out, and a disc of leather or other fabric embossed, colored, or plain, or any other material, is applied underneath, capable of forming with the spaces cut out an ornamental surface.

A metal disc placed on each internal side of the case, and chamfered or burred therein, serves to secure the ornamental fabric.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 14.—N° 125.

RAMSDEN, John Carter.—" Improvements in the mechanism or apparatus of looms for producing a " certain class of fancy fabrics."

The invention relates to the production of that class of goods in which various colours or materials are used for the weft, and by means of which ornamental patterns of different colours or materials can be produced upon the cloth while in the process of weaving. This is accomplished somewhat as follows :— Across the loom in front of the lathe is placed a bar, into which at suitable intervals is fixed a stud. Upon these studs are placed arms which projects downwards towards the cloth; upon each stud there are as many arms as colors required; to the lower end of each arm a needle is attached. Pins are fixed into the bar, upon which are placed the different colours required; a thread from each colour is conveyed to its appropriate arm, and from thence to an eye in the end of the needle. On the top of the bar, fixed in bearings in which they freely slide, are placed small rods; the front rod will actuate all the front arms placed upon the studs by means of pins fixed therein; the next rod will actuate the next arms, and so on, according to the number in use.

The common jacquard apparatus, or some similar equivalent, which forms the shed for the pattern required, will likewise select which arm and colour shall come into operation, and this it accomplishes by either drawing that particular rod required or by causing it to be drawn by means of tappets or wipers or some mechanical equivalent. Thus when the front rod is drawn all the front arms are moved sideways, and by that means the needles attached to those arms are inserted into the warp and carry with them the respective colour attached to each; such threads or colours are prevented returning when the needles pass out of the warp by other needles or pins which pass inwards at a different angle, and so hold the threads until the first needles have passed out and moved out of the way to allow the slay or reed to beat up the yarn.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, January 15.—N° 126.

SAGAR, Thomas, and RICHMOND, Thomas.—" Improvements in looms for weaving."

Our invention relates to the taking up motion of looms, and consists in the use of a number of thin metal blades in lieu of the catches now employed to drive the ratchet wheel; also in making the prongs of the weft fork closed at the end and the grid of the slay to project for the fork to pass through; also in a self regulating letting off motion, being an improvement on the letting off motion patented by us on the 4th day of April 1866, No. 1775.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 15.—N° 127.

BOYER, Achille Barthélemy.—" Improvements in the construction of aerial cradles."

The cradle consists of two elliptical rings united by net work, or it may be made of open wood or cane work, the sides moving on hinges so that they may be lowered and form an inclined plane. The object of these two arrangements is, that in the first case the net work being soft will collapse when the cradle is in the lap, and leaves the bed exposed, so that by placing the hand between the mattresses, that bearing the infant, can be glided towards the mother whilst in bed for the purpose of nursing it without removing the infant from its warm bed, and by this means avoiding unnecessary exposure to cold. In the second instance, the side of the cradle being drawn down, the bed on which the child lies will slide along the inclined plane thus formed towards the mother, who after nursing the child reinstates it as before.

The cradle is suspended by a cord or chain to an arm or bracket mounted on a vertical tubular shaft in two parts, one moving within the other, for regulating the height by means of an adjusting screw; to the opposite end of the cord or chain which runs on rollers placed inside the shaft and arm thereof is a balance weight composed of a number of metal or wooden rings passing over a pin or rod; these rings may be augmented in number as desired by removing a bolt passing through the pin at the bottom. By this mode of suspension of the cradle it can be raised or lowered as desired, and the vertical shaft being furnished with a foot or pedestal moving on castors, the cradle may be pushed or drawn in any direction with the greatest facility with no more inconvenience to the mother than extending her arm for the purpose.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 15.—N° 128.

ALEKAN, Felix, and ALEKAN, Isidore.—" Improvements in studs for shirt fronts and other similar " purposes."

The feature of novelty in this invention is the peculiar form of construction of the bottom plate, which as usual is attached to the pin which connects it to the head of the stud or solitare.

This plate has a longitudinal aperture cut in it extending from the rim or edge of the plate to its centre near the pin, the lips of this opening are bent inversely, that is to say, one upwards the other downwards, thus forming a species of screw.

The object of this is to employ a smaller button hole than usual, and by this means insure the security of the stud from accidentally unfastening, as by inserting the lower lip in the hole and then turning the stud round it will screw itself into position, and it cannot possibly become detached without performing a reverse operation or unscrewing it.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 15.—N° 129.

GEDGE, William Edward.—(*A communication from Frédéric Godeau and Jules Trottier.*) — "The " substitution of thin flexible and moveable blades or cutters of sheet steel in lieu of rigid blades or cutters " in planing machines and machines cutting and shaping wood by means of rotating tools, and an arrange- " ment which permits their use on tool holders or cutter stocks with curved, helicoidal, conical, and other " surfaces."

The thin blades or cutters substituted in lieu of the ordinary thick cutters when placed in the tool-holder or cutter-stock are pressed against it by a counter-plate, beyond the end of which their basiled edge projects but slightly in order that the counter-plate may strengthen the blade and prevent its breakage. This thin steel blades or cutters may be removed for resetting, and are provided with grooves in order that they may be free to be brought forward on their stock as they wear, and screws penetrating into counter-plate and stock press the blades between these pieces.

The same thin steel blades are used for curved, helicoidal, conical, or other cutters, their slight thickness permitting their being set in any suitable way and being held in such shape by means of the counter-plate and of the screws tying it with the tool-holder.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 15.—N° 130.

BECKER, Lewis Matthews.—" Improvements in the mode of laying, supporting, and maintaining the " wires used for electric telegraph and other purposes, parts of which improvements are applicable to other " purposes."

The invention consists of a mode for laying, supporting, and maintaining wires used for electric telegraph and other purposes in tubes, holes, or channels formed or made in blocks or lengths of earthenware or other materials or substances by means of compression or exhaustion of air or other bodies, or by paying off and on machines, by which wires can be laid or withdrawn without re-opening the earth or altering the blocks otherwise than at the junctions whereat it is necessary to conduct or lead off the wire or wires in any directions. The wires can also be lubricated during such processes, and the air or other bodies exhausted, and the ends of the holes or tubes hermetically sealed, whereby the wire or wires are kept free from rusting, oxidising, or other defects. The instrument used to feed, pass, or withdraw the wire or wires by compression or exhaustion, or combination of both, has an air tight stuffing box through which the wire or wires pass, and is so made as to be readily affixed to any of the holes or tubes without interfering with or affecting any of the wires that may have been already laid by this mode.

[Printed, 1*s*. Drawing.]

A.D. 1868, January 15.—N° 131.

NIMMO, George.—" An improved composition for furnace linings, fire-bricks, pots, crucibles, and other " articles."

The ashes and residuum of the combustion of coal having been exposed to an intense heat is adapted to the manufacture of furnace linings, fire pots, crucibles, retorts, and other articles, and for utilizing this material clay and sand or plumbago is mixed with the same and moulded, plastered, or otherwise worked into shape. This material may also be used for cleaning or polishing articles of metal.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 15.—N° 132.

LANG, John.—" Improvements relating to the printing of music."

This invention consists in effecting a double indication of each note by applying letters or other suitable marks *within* the ordinary notes or within any suitable forms of printed notes that may be substituted for the ordinary ones. These letters or marks will be made in a black color or its equivalent within those musical notes which are usually printed open, whilst in the case of the notes usually printed solid they will be shown in white.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 15.—N° 133.

HODGSON, Daniel, and DODD, John.—" Improvements in machinery for cutting grass and corn."

We derive the moving-power acting on the cutting-knife from two levers provided with small rollers at the ends. These rollers act upon vertical corrugations or indentations on a wheel placed loosely on the driving-axle, the said loose wheel being thrown in and out of gear by an ordinary hand-lever. At the other end of the levers are two connecting-rods which pass down to a T-piece or bell-crank, and from the T-piece is a connecting-rod leading to the cutting knife, so that as the levers rise and fall on the corrugations the knife is rapidly drawn to and fro.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 15.—N° 134.

HUDSON, James, and CATLOW, Christopher.—(*Provisional protection only*.)—" Improvements in " looms for weaving."

This invention relates, firstly, to the application of apparatus for " letting off " the yarn from the beam of looms by means of cranked levers arranged, one connected with the bearer or vibrator and an eccentric on the crank shaft, the other connected with the ratchet wheel so as to regulate the delivery of yarn, or a chain is attached to the bearer or vibrator and around a grooved pulley on the neck of the beam and connected with a spiral spring and plate wheel having projections or teeth thereon ; the action of the vibrator is transmitted to this wheel, and by means of a screw adjusts the tension and regulates the delivery. The second part relates to a means of regulating the shedding by attaching straps or chains to the treadles and to the jacks, such straps or chains work in guide pullies, and as they are attached to the treadles nearer or further from the fulcrum on which the treadles work the shed is increased or decreased.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 15.—N° 135.

AYLIFFE, William.—" Improvements in boats and in the means of steering the same."

This Provisional Specification describes an arrangement of steering boats by means of the feet.

Also the making of a boat of staves hooped together like a barrel and with an opening in the centre.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, January 15.—N° 136.

WILLIAMSON, James.—" Improvements in bolting or fastening one part of a ship or vessel to another."

According to this Provisional Specification vulcanized india rubber washers are placed around the fastening and between the planking and the frame of a ship to preven tthe passage of water to the bolt holes : other modifications are also described.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 15.—N° 137.

PARKER, John.—(*Provisional protection only.*)—" Improvements in textile fabrics."

The feature of novelty which constitutes this invention is a new mode of arranging the pattern on cloths from which articles of apparal that are gored when made up are manufactured, the object being to prevent the occurrence of that waste of cloth which takes place when gored articles of clothing are cut from cloth as ordinarily manufactured.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 15.—N° 138.

KIDD, Joshua.—" Improvements in obtaining artificial light and in apparatus employed therein."

This invention consists in effecting the increase of the illuminating power of a jet or flame of gas, or of hydro-carbon vapour, or of mixtures of the same, when alone or in combination with atmospheric air, by causing such flame to issue from a jet or burner, such as a " fishtail " or " batswing " burner, placed at or deflected at an angle of about 45 degrees below a horizontal plane.

In causing the vapour of heavy oils or of hydro-carbons which have a high boiling point to be generated in boilers or stills or other vapourising apparatus, and to issue therefrom under pressure, and then causing the vapour so escaping and when ignited to impinge upon a circular disc constructed of metal or fire clay or other refractory material, such disc being placed at a regulated distance from the jet or orifice. When employing such an arrangement, and when greater brilliancy is required, a stream of oxygen gas may be employed as a substitute for atmospheric air, and may be mixed with the before mentioned hydro-carbon vapour when issuing from the jet or aperture, or when impinging upon the disc. The materials which have been found most suitable for the production of the before mentioned hydro-carbon vapour are the heavy or dead oils of tar, creosote, napthaline, heavy oils of petroleum or coal, and other similar fixed oils, which are now of small commercial value for the purposes of illumination.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 15.—N° 139.

HEAD, Jeremiah.—(*Provisional protection only.*)—" Improvements in furnaces for puddling, boiling, " melting, or heating iron or steel."

This invention relates to furnaces where two or more regenerators one applied to each furnace to receive alternately the waste heat of the products of combustion and to restore such heat to that part of the furnace where ignition and combustion commence.

My invention consists in introducing a jet or jets of steam into any part of the flues or passages leading from the place where ignition and combustion begin to the extreme outlet or outlets of the said flues or passages where the waste gases are discharged into the atmosphere, the jet or jets being caused to act or blow in the direction opposite or nearly so to that taken by the products of combustion when passing forwards to their outlet. I prefer to construct the furnace with a double stack or chimney, each flue of which is formed into a regenerator for a part or the whole of its length by any convenient arrangement of fire brick, gannister, or other refractory material. At the top of each flue I prefer to have two openings, one of which is fitted with a damper in the ordinary way, and the other is an orifice through which a steam jet is introduced blowing downwards. The second opening or orifice is so arranged that it can be closed with a damper or plug when the steam is turned off. The neck of the furnace branches off to either flue of the stack, and is fitted with two dampers so that the waste products of combustion can be directed at will up the one or the other. Each flue of the stack is continued downwards below the neck, and the two flues eventually unite in one, which one passes under or along the side of the furnace backwards towards the ashpit. Just below the neck and before they unite, each flue of the stack is provided with a damper to cut off connection between the two, and also between themselves and the lower flue. The waste products of combustion are alternately passed through each flue of the stack and the regenerator contained in the same; the steam jet being at the same time turned on in the flue, up or through which the waste products of combustion are not at the time passing. The waste heat previously taken up by that regenerator is thereby conducted downwards past the neck and through the lower flue towards the back of the furnace. The steam acting through the orifice at the top of the stack induces air to follow it, and the mixture forms a vehicle for the conveyance and restoration of the waste heat to that part of the furnace where it is needed. At the end of the lower flue, part of its contents are conducted into the ashpit, which is provided with doors to close it in, and such part is directed upwards through a suitable nozzle against the burning fuel, whilst the other portion of the gases or contents pass on through an upright pipe with suitable bends into the back part of the furnace, where they are discharged in jets or streams to mix with the gases given off above the fuel. These arrangements may be varied by causing the jet or jets of steam to pass through suitable orifices at any part of the flues below the top, or a jet or jets of steam may be admitted into the lower flue blowing in the direction of the back of the furnace. In this case the steam would produce a partial vacuum, owing to which air would rush downwards from the top of the stack, absorbing the heat contained in the regenerator in its passage, and thus producing a mixture with the steam to be utilized as previously described at the place of ignition or combustion. In the last case the steam may be superheated by conveying it through pipes which pass through a portion of the flues traversed by the waste heat before it is discharged in a jet, thereby taking up an additional portion of heat and restoring the same when required. My invention further consists in introducing steam into the flues, passages, stove pipes, or chambers connected therewith of any furnace used for puddling, boiling, melting, or heating iron or steel in intermittant jets or puffs in a manner similar to the exhaust of the steam engine.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 15.—N° 140.

WILKINS, William, and POLLARD, William Gamble.—"Improvements in the manufacture of "knitted reversible garters and bootakins for children, and in mitts and armlets for ladies, gentlemen, or "children."

This invention relates to the improvements in the manufacture of knitted reversible gaiters and bootakins for children, and in mitts or armlets for ladies, gentlemen, or children.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 16.—N° 141.

TRAVIS, Thomas, PRINCE, William Henry, and TOMLINSON, James. — "Improvements in "machinery for clearing and smoothing yarn and thread."

The object of this invention is to clear and smooth yarn and thread by mechanism instead of by fire as customary. We can apply our improvements to the ordinary gassing frame by twisting the yarn or thread around a series of caps, spools, or bobbins mounted on skewers and placed between the bobbins on which the yarn or thread to be operated upon is wound and the friction rollers that wind up the finished yarn or thread.

[Printed, 8*d.* Drawing.]

A.D. 1868, January 16.—N° 142.

EGGLETON, Jason.—(*Provisional protection only.*)—"Improvements in the manufacture of 'bellow's "'regulators' for water closets."

This invention has for its object the rendering of Bellow's regulators for water closets less liable to getting out of order and decay, the materials of which they are constructed being of brass and india rubber combined with a greater simplicity of arrangement than is usual in the present regulators; they can also be manufactured at a much cheaper rate.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 16.—N° 143.

ASHWORTH, John Jackson.—"Improvements in looms."

The features of novelty in this invention consist in simplifying and improving the actuating and other mechanism of certain descriptions of shedding-motions of fancy looms for weaving patterns of any number of picks to the round.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 16.—N° 144.

TOLSON, James, and BOOTHROYD, James.—(*Provisional protection only.*)—"Improvements in mule "spinning machinery."

The special purposes of utility to which this invention has reference are, firstly, the simplification of parts in what is known as the "jacking up" motion when twisting woollen yarns, and also, secondly, effecting the operation by such simplification in a more gentle and equable manner than is now the case.

For this purpose we "jack up" direct from the "drawing up scroll," and to the centre of the lower part of the mule carriage attach a cranked horizontal lever or "holding out catch," which upon approaching the end of its traverse falls upon and catches a "holding out stud." The traverse still continuing slide bars connected to the "holding out stud" are pushed forward until the end of the traverse is reached. A cranked pin is then caused to act upon a depressing lever, which is in conjunction with the "frictional surfaces," and throws the same partially into gear sufficiently so to draw back the carriage the space of three or four inches, as the case may be. This "jacking up" motion being effected, certain "fallers" then come into action, and the depressing lever and cranked pin fall back, allowing the frictional surfaces to work in the customary manner.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 16.—N° 145.

SCHNEIDER, Rudolph.—"Certain improvements in the manufacture of piled fabrics."

The novelty of the invention consists in the novel application aud use of the material called "China grass" in the manufacture of piled fabrics instead of or in combination with silk to constitute the pile, cotton or other material being used for the back of the fabric.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 16.—N° 146.

BROOMAN, Clinton Edgcumbe.—(*A communication from François Alphonse Jacquet.*)—"Improvements in gas heating and cooking apparatus."

This consists partly in the combination of double bottoms above gas burners or lamps producing a draught with a double current of air for keeping up combustion, and partly in the employment of reflecting surfaces to prevent dispersion of the heat.

Several apparatus are described, but their construction cannot be made sufficiently clear without drawings.

One consists of what is termed an oven griller, in which the gas burner is situated below a partition above the middle of the apparatus. Flanges support vessels for receiving the food to be cooked, upon one of which a gridiron may be fitted. The apparatus may be divided horizontally above the burner into two parts, so that cooking or boiling can be effected on a metal plate immediately above the burner. The action of the gas and the air currents will be understood from the drawings filed with the Provisional Specification.

Another consists of what is termed a roaster and heater made of enamelled iron, and composed of an outer jacket or case arranged so as to have a current of air. A rectangular inverted basin is placed a little over the gas burner, and an opening is left at the lower end to allow the gas to issue. When desired to roast game an ordinary roaster is employed, and where simple cooking or boiling is required the vessels containing the food are placed on the movable cover of the apparatus.

Another consists of what is termed a boiler and heater which will boil water at the same time that it will cook food. The essential parts are a hollow ring to contain water to be boiled; a gas burner arranged so as to heat the whole of the ring, and a foot sufficiently distant from the ring to allow a current to be formed; this foot carries a hollow cone in the centre of the ring, establishing another current of air. The vessels containing food are placed on the apparatus.

Another arrangement is specially intended for roasting meat, and the same arrangement of currents of air is adopted. The gas pipe is supported by two holes formed in the sides of the case, and the same mode of support is employed for a steel arm, which carries a wheel to regulate the movement. The cover carries a small movable pan with a perforated bottom.

A fork, the points of which engage in the perforations, regulates the passage of the gravy put into the pan; the gravy runs through the perforations, and after basting runs into another movable pan at the bottom.

Another arrangement, similar to the third but smaller, effects the cooking of food contained in vessels placed upon it.

In another arrangement for heating apartments the current of air and gas is produced as in the arrangement first described, and a reflector of enamelled iron radiates the heat. A particular arrangement of pipes is adopted for the renewal of the air in the apartment in which this apparatus is placed.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, January 16.—N° 147.

MULLORD, Henry Bartholomew, and MULLORD, Alexander.—(*Provisional protection only.*)—"An improved material for the manufacture or ornamentation of bonnets and other articles."

The material is composed of silk or satin glued on a backing of one or more thicknesses of paper or parchment to give it stiffness and durability.

The material so prepared is embossed in designs according to the purpose desired by means of a die, the perforations being produced by the aid of glass paper. This improved material we apply for ornamenting bonnets, book covers, valentines, and for the manufacture of collars, cuffs, and such like articles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 16.—N° 148.

WOOD, James.—"Improvements in windows."

The feature of novelty which constitutes this invention is the construction of windows whereby the window sashes or frames may be conveniently removed from the cases for cleaning the glass or for other purposes.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 16.—N° 149.

JONES, John Allcock.—"Improvements in the manufacture of iron and steel."

This invention relates to certain improvements in the manufacture of iron and steel from pig iron or refined metal.

In carrying out my invention I proceed as follows:—

I first puddle the iron or metal in a puddling furnace. The object of the puddling is by the aid of clean cinder or oxides of iron, or oxide of manganese or other oxidizing materials, together with the act of puddling, or by the act of puddling alone, so as to cleanse the pig iron or metal from sulphur and phosphorus and other impurities as to make it fit for melting into cast steel. After the pig iron or metal has been treated as above it is boiled in the usual manner and the cinder allowed to run from it; it is then balled into balls and removed from the furnace and plunged into water, or it may be removed in the shape of convenient lumps, and is placed either hot or cold in a receptacle or crucible, which receptacle or crucible is placed in the hearth of an ordinary reverberatory furnace or in any other kind of furnace or heater, such as a regenerative or other furnace, which may be suitable for the melting of the said balls or lumps into cast steel. The balls or lumps before being placed in the crucible or receptacle may be broken into fragments, which I prefer, so that the metal may be more easily melted and so that it will occupy less room, and also with a view to the selection of the pieces and on account of being thereby able to mix the ingredients necessary for fluxing the metal through the mass. I also take pig iron or refined metal, and after it has been melted in a puddling, reverberatory, air, or other furnace I tap away a portion or nearly all of its cinder, and then removing the iron treat it in the manner before described; or I take it in any of the intermediate stages between the melting and balling processes and use it as before described, but I prefer the iron boiled and balled and broken into fragments. A cover may be placed on the crucible or receptacle to exclude atmospheric air, or the cover may be dispensed with and the scoriæ be made a sufficient protection, or a layer of clean cinder may be placed on the top for the same purpose. When the crude iron is sufficiently melted into steel I run the latter into moulds either by tapping the receptacle or crucible, or by lifting the crucible out of the furnace and running the metal into the said moulds, after which it may be hammered or rolled as desired. For making finished castings to any shape I run the steel into moulds, and the castings may then be annealed or not as required. The process above described is particularly adapted to metal or iron which in the first place is impure, such as the Cleveland pig iron, though it is applicable to other brands of pig iron or metal. In place of puddling the metal I also take pig iron or metal and place it direct in the receptacle or crucible before mentioned, and after the metal is melted and partially boiled I tap off a portion of or all the cinder and then proceed to melt the residue as described, but I prefer the puddling, balling, and breaking into fragments as being better adapted for getting a finer quality of steel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 16.—N° 150.

BETTS, William.—"A new manufacture of a material to be used in the production of capsules, and for other purposes where thin flexible metallic sheets are employed.

This invention consists in reducing an ingot of lead by rolling to about ⅜ths of an inch in thickness, then covering one of its surfaces with a band of tin, uniting by pressure the tin, and lead and reducing the combined metal to a thin band, which band is cut into strips, and the strips folded over both sides of an ingot of lead which has been reduced to about ⅜ths of an inch in thickness, then combining the metals by pressure and reducing the combined metal to a long strip, which is cut into convenient lengths and passed breadthwise through broad rolls until the thickness required for use is attained.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 16.—N° 151.

ROLLINS, John Gustavus.—(*A communication from Welcome Hitchcock.*)—(*Provisional protection only.*)—"Improvements in baskets for containing fruit and other goods."

The invention has for its object improvements in baskets for containing fruit and other goods, whereby such baskets when empty may be packed in a small space, and when required for use may be readily and firmly put together.

For this purpose the sides of the basket are formed of one strip of thin wood or other suitable material provided with slits or perforations for ventilation and for supporting the bottom, which may be of any suitable material, and is provided with corners or projections to take into slits or perforations formed in the sides. When the corners or projections are inserted in the slits or perforations the parts are retained in position by means of clips or other suitable means.

The basket may be of any suitable shape, but when of an angular form the parts of the sides forming the angles of the basket are slightly cut or indented so as to facilitate the bending thereof, and yet prevent breakage.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 16.—N° 152.

NASH, Thomas.—" Improvements in stoves and fire-places."

The chief feature of novelty in this invention is the construction of stoves or other fire-places with a hollow hot-air chamber into which the current of heated air from the fire is led, through the curved passage, and in which said hot-air chamber the soot must fall and be consumed.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 16.—N° 153.

READING, George Edward.—" Improved busk fasteners."

Two busks are used, to one of which catch plates are attached to receive corresponding catches secured to the other busk. In order to fasten the busks one to the other springs are attached to one or both sets of catches to press them together. One or more of one set of catch plates is or are provided with a stop or stops to prevent parallel motion; or a bolt or similar fastening is used for this purpose. Fastening is effected by bringing the busks near to each other, so as to place the catches under the springs when they will take into each other. Unfastening is effected by a lateral movement (which will not be necessary where a bolt is used) and by an upward and downward motion.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 16.—N° 154.

ABEL, Charles Denton.—(*A communication from Jean Joseph Adolphe Poulet.*)—(*Provisional protection only.*)—" A new or improved system of moveable switches, tongues, or rails for the crossings and intersections " of the permanent way of rail ways."

This invention has for its object, firstly, to do away with the fixed points or tongues and guard rails at the first and last intersections of crossings of two lines of rails. For this purpose the two inner converging rails are stopped short at some distance to one side of the point of intersection, and at such point is hinged a moveable switch so formed as to continue the line of each such rail up to where the point of intersection would be. At such point the switch meets the ends of the two rails on the other side of the point of intersection, which are also stopped short just before they intersect. By moving the point of the switch so as to form the continuation of either the one or the other of these two rails the continuity of either the one or the other of the two lines is established.

The motion of the switch is effected either by hand or automatically by the wheels of the passing trains by means of a system of pedals fixed at the sides of the rails connected to the switch by rods and levers. The crossing switch may be operated by the same lever that moves the switch at the point where the two lines converge into one, when this is the case; it may also be made by the action of a weighted lever always to remain in position for the main line, when not otherwise placed.

Another part of the invention hss reference to the middle point of intersection of a crossing. Here also the rails are stopped short before they intersect, and a switch rail turning on a fixed vertical pin in the middle of its length is placed between such stopped short ends, and is made to move into position so as to establish the continuity of either the one or the other line of rails, according to the requirements of the traffic. The two switch rails, one on each side of the line, are connected together so as to be moved simultaneously, and they may be actuated either by hand or automatically by the action of the passing trains upon pedals as before described.

In another arrangement only the two inner pairs of the eight converging rails are stopped short, while the outer rails are made continuous, thus forming an angle where the intersection would take place. Each inner pair of rails is provided with a switch, the points of which meet where the intersection would occur; they are similar in arrangement and action to ordinary switches, but they are so connected together by means of a double ended lever working on a fixed fulcrum that when the one switch is moved by a passing train the other switch is simultaneously shifted into a corresponding position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 16.—N° 155.

POSTILL, Francis.—"Improvements in kilns or ovens for burning or baking bricks, earthenware, lime-"stone pottery and other ceramic articles."

This invention has reference to kilns working on a continuous system.

A kiln is constructed, divided by permanent division walls into four or more chambers arranged round a central chimney, the sides of each chamber being however straight so that in plan the entire kiln has either a square or polygonal form. These chambers communicate at one or more points with the central chimney by means of separate flues or passages to each chamber, provided with dampers, and they also intercommunicate by means of flues or openings formed through or beneath the division walls at a point as close as practicable to the outside wall of the kiln, which flues are provided with dampers. Doorways or openings are formed in the outside wall, through which the goods to be fired are introduced, which openings are temporarily closed when the kiln is at work. The fuel for firing the kiln is introduced through openings in the roof of the kiln, provided with valves or covers.

The fuel is fed in and ignited close up to one of the division walls, and is carried forward by introducing fuel at different points. During this time the chimney flue is opened and the flue in the division wall closed. These are reversed when the firing has advanced. The air for supporting combustion in passing through the goods that have been fired in a rear chamber takes up their heat before passing into a chamber that is being fired.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 16.—N° 156.

NEWTON, William Edward. — (*A communication from Edouard Stehelin.*) — (*Provisional protection only.*)—"Improved machinery or apparatus for shaping, grinding, sharpening and polishing sword blades "and handles, scabbards, gun barrels and other arms."

This invention consists, firstly, in sharpening swords by means of a large grindstone or emery wheel in connection with a pattern guide; also polishing them by the aid of felt or cloth; in cutting and shaping them by means of circular cutters.

The second part consists in grinding and shaping gun-barrels and sword scabbards by means of rotating shafts to which the gun barrel or sword scabbard is fixed, and keeping them in close contact with a grindstone or emery wheel by means of a moveable carriage pushed forward by a weighted lever.

The third part consists in cutting and shaping sword handles by means of circular cutters. The handles are fixed to a carrier wheel and are successively brought under the action of the cutters.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 17.—N° 157.

BATCHELOR, James, and SMITH, John.—"An improved power loom for weaving Brussels carpets."

To make an extra quality and quantity of carpet with inferior materials.

The improvement consists of economy in working and simplicity of machinery, whereby it will require less power in working it.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, January 17.—N° 158.

HEATHFIELD, Richard.—(*A communication from John Henry Geary.*)—"Improvements in machinery "for the manufacture of nails and tacks."

According to this invention the moveable cutter, by means of which and the fixed cutter the piece of metal is cut off to form a nail or tack, is made in two parts, the said parts having different ranges of motion and serving both to cut off the piece of metal and to carry the cut off piece to the gripping dies for heading. The part of the moveable cutter having the greatest range of motion has a spring arm under its end, between which arm and the end of the cutter the cut off piece is held and carried on the descent of the said part of the moveable cutter to the gripping dies, which close upon and hold it firmly during the heading process. The part of the cutter described rises and the spring arm retires before the heading punch advances to head and complete the nail.

[Printed, 1*s*. Drawings.]

A.D. 1868, January 17.—N° 159.

MOORHOUSE, Joseph. — (*Provisional protection only.*)—"Improvements in that class of machinery "known as 'cone drawing' employed in drawing or preparing wool."

The novelty consists,—

In dispensing with the gills or fallers employed in such machines and placing the back and front drawing rollers nearer together.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 17.—N° 160.

LÖBINTZ, Henry Christian, and BUQUET, Amédée.—(*Provisional protection only*.)—" Improvements " in apparatus for propelling ships or other vessels."

This invention relates to the propelling of vessels designed more particularly for navigating shallow waters and where a chain or chains may be laid whereby the vessels may work themselves along; and the invention consists principally in combining with the steam machinery arranged for acting on the chain or chains paddle-wheel or other suitable propelling apparatus (capable of acting independently of any fixed chain), such propelling apparatus being disposed wholly, or nearly so, within the contour of the vessel. In one modification of internal propelling apparatus that it is proposed to adopt in carrying out the invention a paddle wheel is arranged in a casing in the middle of the vessel, from which casing an open channel is formed along the bottom of the vessel to the stern, whilst the fore body of the vessel is made entire in the ordinary way. There may, however, be channels or passages both fore and aft, and the propeller may be a screw, centrifugal pump, or other suitable apparatus.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 17.—N° 161.

BURROWS, Samuel, and BURROWS, Edwin. — " Improvements in the method of employing waste " steam and the water arising from the condensation thereof, and in apparatus connected therewith."

The novelty and feature of the invention consists in inserting or applying through an aperture in the top of the boiler an inverted hollow cone, a flange being formed at its base by which it is secured to the boiler by a steam tight joint; the lower end or apex of the cone terminates in a small tube, which dips in the water somewhat below its lowest level; the upper end of the cone outside the boiler communicates with the steam heating pipes. These pipes extend from the boiler in the ordinary manner through the mill, the return or entrance into the boiler being effected by and terminating in the cone, and the superior pressure arising from the column of water in the cone allows it to be gradually received through the small tubes into the boiler.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 17.—N° 162.

HOSKING, John, the younger.—" Improvements in the cutting heads of instruments used in drilling, " boring, tunnelling, or otherwise penetrating stone or other hard material."

The invention consists in arranging the cutters upon the cutting head in a curved line or lines, such curved line or lines not being portions of circles, having the centre of the cutting head for their centre.

The form of the cutting head is " egg ended," so that in longitudinal section the lines of the face of the cutting head will be curved lines; but the precise form of the cutting head may be varied.

The number of cutters and lines of cutters employed and mode of arranging them will be altered to suit the material to be operated upon. The cutters may be either formed of separate chisels or cutting edges or made solid upon the cutting head.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 17.—N° 163.

YOUNG, John.—(*Provisional protection only*.)—" Improvements in washing, and in the apparatus or " means employed therefor."

The feature of novelty which constitutes this invention is, the construction of washing machines without the outer casing at present employed, and the forming or the washing basket with the ribs much closer together than hitherto, whereby a considerable saving of soap or other washing substance is effected.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 17.—N° 164.

AITKEN, Henry.—" Improvements in treating iron ores or ironstones for the purpose of effecting " economy in the obtainment of iron and other products therefrom."

The feature of novelty which constitutes this invention is, the coking or carbonising of the ores in any convenient kind of retort, kiln, or oven, so that the volatile matters may be driven off and used or preserved for future use.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, January 17.—N° 165.

CROSSLEY, Joseph.—" Improvements in washing printed and parti-colored yarns."

This Provisional Specification describes washing printed or parti-colored yarns after the colors have been fixed or set by laying the yarns lengthwise and in a horizontal position upon openwork supports and directing upon the deeper or darker colored parts of the yarn jets of clean water to carry away the excess of coloring matter through the openwork supports without soiling the lighter colored parts of the yarn; the yarns are afterwards washed in the ordinary manner.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 17.—N° 166.

NAPIER, James Murdoch.—" Improvements in apparatus for cutting and dressing metals, woods, and " other materials, and in the tools to be used in combination therewith."

This Provisional Specification describes the use of cutting tools having a circular cutting edge and rotated when in action so as to bring different parts of the edge successively into action.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, January 17.—N° 167.

FYFE, David Adam.—" An improved mode of manufacturing paper pulp from wood and other fibrous " materials."

Wood or shavings are cut up in a chaff engine, and then boiled in an alkaline solution, after which the fibres are disintegrated by grinding or crushing by callender rollers, after which they are bleached and washed and then converted into pulp in a pulping engine.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, January 17.—N° 168.

ROLFE, Nicholas Hall.—(*Letters Patent void for want of Final Specification.*)—" Improvements in " machinery for cutting laths."

The invention consists in making laths from continuous sheets of wood as produced in a scale board or veneer cutting machine. For this purpose I mount a roller having cutters above the log of wood placed in the machine and set in motion by suitable gearing as usual. This cutter roller bears on the wood and is rotated thereby, being at same time geared with the driving power so as to cause the cutters to penetrate the rotating log and produce incisions in its periphery an inch or so apart before it reaches the machine knife, when it is severed from the log in the form of a lath or strip of the desired width.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 17.—N° 169.

LAKE, William Robert.—(*A communication from Dawson Miles.*)—" An improved mode of treating " wood veneer and forming therefrom sheets or cards for various purposes."

My invention relates partly to covering walls with thin sheets of wood veneer which are made flexible by the aid of steam or water and applied to the walls by means of paste or other adhesive substance. The said invention also relates to the manufacture of cards for printing or other purposes from sheets of wood veneer condensed by pressure and united with the grain of one sheet crossing that of the other, such cards may be enamelled or varnished.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 17.—N° 170.

FISHER, George Smith.—(*Provisional protection only.*)—" An improved implement for cutting hay, " straw, and other like substances."

The object of the said invention is the construction of an implement for cutting hay, straw, and other materials from a mow stack or truss in a more convenient and expeditious manner than has been hitherto practicable, and the said invention consists chiefly in the peculiar combination of a cutting blade or knife with two handles, one of which is formed or fixed at the extremity of a rod or stem which carries the knife while the other handle projects at right angles from the said rod.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 17.—N° 171.

WINTER, James, the younger.—(*Provisional protection only.*)—" Improved apparatus for filling glass " bottles and jars with soups, jellies, and fruits for the purpose of preserving them, the said apparatus being

" also applicable for filling bottles with sauces, wines, spirits, beer, liqueurs, and other still and effervescing " beverages; also machinery in combination with the above apparatus for corking or stoppering such said " bottles and jars."

This invention consists in filling and corking or stoppering glass bottles and jars with soups, wines, beer, &c., by means of a vacuum chamber which exhausts the air from the bottles or jars and causes the soup, &c. to rush thereinto from a vessel heated by steam. The bottles and jars are also heated by steam being admitted into a rotating bottle and jar holder. Whilst the bottles or jars are in communication with the vacuum chamber, and after they have been filled, certain mechanism feeds and inserts a cork or stopper into the mouth of the jar or bottle, and these several operations are conducted in quick order of succession or nearly simultaneously. The principal feature of novelty in this invention consisting in performing the several operations under a vacuum.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 18.—N° 172.

MILLWARD, **John**.—(*A communication from Andrew Jackson Reynolds.*)—" Improvements in the means " and apparatus or machinery for propelling ships or vessels."

This invention consists in driving the paddle wheels or screw or other propellers of vessels by machinery worked by water power. For this purpose the " head " or pressure is produced and stored either in accumulators or tanks by steam or other power, and is applied either to an intermediate water power wheel or motor acting on the paddle wheel or propeller, or it may be made to act directly on paddle wheels combining the characteristic of water power wheels. The water power wheels or combined water power and propelling wheel may be made with hinged or reversible buckets or floats for driving them in either direction.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 18.—N° 173.

KAY, **Thomas Bispham**, and **HAMILTON**, **Francis**. — (*Provisional protection only.*) — " Certain " improvements in carding engines to be employed for carding cotton and other fibrous materials."

The novelty and feature of the invention consists, first, in combining a spring or springs with the lifter (against which the top of the flat presses when in position for stripping) instead of applying a spring to the upper rim of the revolving box, by which combination and arrangement the spring may be employed and is available not only for steadying the flat when in the said position, but also for pressing upon the top of the flat when in its place upon the bend of the carding engine.

Secondly. In so arranging the stripping box that it will oscillate upon the stripping comb shaft during the turning over ascent and descent of the flat.

Thirdly. In arranging, driving, and effecting the vibration of the stripping comb so that a greater number of beats or vibrations may be obtained in a given space of time and a simplification of mechanism effected.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 18.—N° 174.

LLOYD, **Hugh Hughes**.—" Improvements in coffins."

My invention has for its chief object the preservation of the bodies of the dead in the condition in which they may be at the time of death. This is done by enclosing them in vacuum anti-corrosive composite metalli coffins made of sheet copper or zinc, or other suitable metal or alloy of metals, or other material imprevious t air, the coffins being so constructed that the air may be abstracted by air pumps applied to circular valves o apertures which are by preference placed one at each extremity of the coffin and another near the centre.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 18.—N° 175.

MOORE, **Benjamin Theophilus**.—(*Provisional protection only.*)—" A new or improved apparatus fo " protecting water pipes from injury by frost."

This invention consists in applying to service pipes conveying water to houses and other buildings a apparatus consisting mainly of a two way cock so arranged that under ordinary circumstances it allows th intercommunication between the main and service pipe, but on the occurrence of frost it is caused to mov automatically so as to close this communication and to establish a communication between the service pip and an escape aperture or branch pipe through which the water in the service pipe flows out. For thi purpose, in the arrangement described, the plug of the cock carries a weighted arm or lever, which when th cock establishes the communication between the service pipe and the main is in a horizontal position, i which it is supported by a glass vessel filled wholly or partially with water and attached at one point to the arm and at another point to a fixed stud or hook. On the occurrence of frost the glass vessel is broken and the weighted arm is thus caused to fall so as to turn the cock into a position in which it closes the communication with the main and opens the communication with the escape opening or branch. The barrel of the cock is closed at one end, and the plug is pressed home in its seat by a spring placed between the end of the plug and the cover of the barrel.

In summer time the glass vessel may be replaced by a wire or hook, and the escape branch be closed with a plug or cap.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 18.—N° 176.

DORSETT, Edward.—" Improvements in the utilization of coal tar and the products arising from the " distillation thereof and in the apparatus employed therein."

The novelty consists in,—

The mode of utilizing the creosote obtained from the distillation of coal tar for the purpose of distilling tar, evaporating or distilling other liquids, and generating steam.

The creosote is placed in a boiler and heat applied thereto, the vapour given off from the said creosote is conducted to the tar or other boiler by means of a pipe which is perforated at that part which is underneath the boiler; the vapour is ignited as it issues from these perforations and impinges on the plates of the said boiler and thereby causes the desired results.

[Printed, 1*s*. Drawings.]

A.D. 1868, January 18.—N° 177.

WHITELEY, James.—(*Provisional protection only*.)—" Improvements in twining 'jennies,' or apparatus " for twining or doubling cotton, silk, worsted, and other fibrous substances."

The novelty consists in,—

The application of spirally grooved pins or studs for the threads to turn around, which pins also substitute slides for holding the threads during the " putting-up " of the carriage.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 18.—N° 178.

KERSHAW, Henry.—" Improvements in means or apparatus employed in spinning worsted and other " fibres."

The improvements relate to the use of levers or other projections which may be hooked and have knife or saw edges applied to either or both sides of either or both of the last delivery rollers to separate any threads which may in passing from such delivery rollers have doubled or become connected with the thread from other rollers.

And to the use of tubes or cones below the top board or guide rail, extending sufficiently below the tops of the flyers to prevent the threads to the respective bobbins becoming connected together between the guides and the flyers and bobbins.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 18.—N° 179.

BONNEVILLE, Henri Adrien.—(*A communication from Charles François Auguste, Viscount de Brettes-tharin.*)—" A new and improved fly cover for protecting stitched books."

This invention relates to a fly-cover or folding envelope of a metallic or other material, which is adjusted on to the paper covers of stitched books, whereby they are more easily read, and at the same time protected from external injury, as if covered in the ordinary manner of bound books.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 18.—N° 180.

BONNEVILLE, Henri Adrien.—(*A communication from Pierre Bonnet and Antoine Fargère.*)—(*Provisional protection only*.)—" Improvements in ribbon looms."

This invention relates to the substitution of the batten said to be with hooks for figuring ribbons or such like embossment work and otherwise working with several shuttles in lieu of the ordinary batten said to be with pinions used up to the present day.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 18.—Nº 181.

BONNEVILLE, Henri Adrien.—(*A communication from Christophe Balay.*)—“ Improvements in ribbon “ looms.”

The invention relates to certain modifications in bar-looms which allow of manufacturing and cutting out mechanically and at the same time several pieces of terry ribbon velvet in as perfect a manner as on the low heald loom, with which, up to the present time, a single piece can alone be manufactured.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 18.—Nº 182.

BOCHKOLTZ, Auguste.—“ An improved mechanical arrangement to be employed in connexion with “ self-acting valves.”

The object of this invention is to prevent the waste of motive power in self-acting valves, especially such as those which are employed in pumps. The essential parts of the arrangement, which acts as a “ regenerator ” of power, are a weight fixed on the end of an arm which has an oscillating or pendulum-like motion. To this arm is attached another arm, the two arms forming together a crank lever, by means of which the weight is easily placed in communication with the main pump-rod, from which it receives the oscillatory motion. The second arm is connected with the main pump-rod by a connecting rod, or the weight may be connected with the main pump-rod by any other suitable and known manner, provided that it imparts to the weight at each single motion of the main pump-rod a double motion, namely, first, a descending, and, secondly, an ascending motion, bringing it up to his original level. The result may be attained in different ways, but the use of the crank-lever and the connecting rod is preferred.

By means of this invention the loss of effective work in pumping engines caused by the excess of weight which it has hitherto been necessary to give to the main pump-rod in order to work the self-acting valves, or to obtain more speed in such engines, is avoided, and the excess of weight dispensed with.

[Printed, 1*s*. Drawings.]

A.D. 1868, January 18.—Nº 183.

HEYWOOD, Bennett Johns.—(*Provisional protection only.*)—“ Improvements in the manufacture of “ pencil cases.”

In the case (in rear of the inserted lead) a plunger which carries a spring is fitted that will press against the sides of the bore of the case or nip a rod pendent from the top of the case, and will tend to retain the plunger in the desired position. Behind this plunger is inserted a loose propeller which when jerked into contact with the rear end of the plunger will drive it forward, causing it to advance the lead as required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 18.—Nº 184.

DAVIDSON, James.—“ Improved machinery for manufacturing bullets.”

In forming bullets by this invention lengths of round rod lead are cut off by a rotating plate fitted with bushes, into which the end of the rod is fed. The lengths are then submitted to a punch and die fo an ordinary bullet, or in the case of making Mitford bullets to two punches and dies, which punches form conical recesses in their opposite ends, one to receive the conical expanding plug and the other to be close upon a pin or core contained in a die which moulds the forward end or point of the bullet.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, January 18.—Nº 185.

NEWTON, William Edward.—(*A communication from Monsieur Edouard de Beaumont.*)—“ Improvements in ovens or kilns for firing or baking porcelain and various kinds of earthenware or pottery.”

In pottery kilns the heat is made to pass from fire boxes along horizontal flues and up a central flu from the top of which it is reverberated down to the hearth, where it passes through openings alon horizontal flues and up outer flues into the chimney, from whence it escapes to the atmosphere.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 18.—Nº 186.

CARR, John, and LUCOP, Charles.—“ Improvements in the manufacture of meat and other biscuits.”

According to this Provisional Specification biscuits, after they have been baked, are ground to powde then mixed with an extract of meat or other substance which will not bear the baking heat, and afterward moulded by pressure.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 18.—N° 187.

FISHER, George Smith.—(*Provisional protection only.*)—" Improvements in links or couplings for " harness and other purposes."

The said invention consists partly in constructing links or rings of wire with a split or division which is widened at the exterior of the link to facilitate the introduction of the same within another ring or connection. The said invention also consists partly in combining with the said split links or rings, a tongue or catch to form a buckle.

[Printed, 4d. No Drawings.]

A.D. 1868, January 18.—N° 188.

BAYNES, Frederick James.—(*Provisional protection only.*)—" Improvements in kitchen ranges, which " improvements are also applicable to other cooking stoves."

The invention relates to applying part of the front bars in a frame capable of turning on centres in front, so that such bars may at one time be turned inwards to form a bottom for the fuel to rest upon, and at another time form as heretofore part of the front bars of the grate in front of the fuel.

The improvements are also applicable to other cooking stoves.

[Printed, 4d. No Drawings.]

A.D. 1868, January 18.—N° 189.

TIMMINS, Daniel.—" Improvements in motive power engines."

In arranging a motive power engine for propelling vessels according to this invention a motive power cylinder and a vacuum cylinder situated in the same line are used, their pistons being connected together by one piston rod. Between the cylinders is a condenser communicating both with the vacuum cylinder and the motive power cylinder.

The motive power cylinder is open at its rear end, the water on which the vessel is floating filling up the cylinder to the piston. A vacuum being produced in the vacuum cylinder and steam being admitted into the motive power cylinder the two pistons are urged forwards, the motive power piston forcing the water out of the open end of its cylinder and thereby propelling the vessel. By producing a vacuum in the motive power cylinder the pressure of the water and air against its piston propels it backwards, the pistion of the vacuum cylinder partaking of its motion.

By the reciprocating motion of the two pistons the vessel is propelled.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, January 18.—N° 190.

GOPSILL, George.—(*Provisional protection only.*)—" Improvements in sleeve links, which improvements " may also be applied to other dress fastenings and fastenings for articles of jewellery, and for other like " purposes."

According to this invention the hinged bar of the sleeve link or article is fastened to the body of the same by the free hooked end of the bar being shut down into and made to snap under an edge in the top of a hollow cylinder fixed on the body, the liberation of the said hooked end of the bar from the edge described of the cylinder and the unfastening of the sleeve link or article being effected by a cranked lever at the bottom of the said cylinder.

[Printed, 4d. No Drawings.]

A.D. 1868, January 20.—N° 191.

DAVIES, Joseph—" Improvements in machinery for shaping malleable materials and in apparatus for " constructing the same."

The object of my invention is to form or shape metals into a variety of forms and for varying diameters by means of a roller and shell, having its inner surface semi-circular or concave, or by two rollers. The distance from the inside of the shell to the roller or the space between the two is equal to the diameter of the object that has to be shaped or formed, or I use a mandril and two rollers, to which rectilinear and semi-rotary motion is given; the shape cut out of the rollers forms the outside of the object and the mandril is the shape of the inside of the same.

The tools for shaping the rollers and shells consist of a bed plate, headstock, and slide rest, which latter receives motion from cams or templates.

[Printed, 3s. Drawings.]

A.D. 1868, January 20.—N° 192.

DOLBY, Thomas George Fonnereau.—" Improvements in feeding bottles."

The invention consists of a clack or clapper and valve formed in *one piece* of india rubber, or any suitable substance, for in cutting the clack or clapper it is only partly separated from the valve, sufficient attachment being left to act as a spring to close the valve. The clack or clapper is cut in the valve, so that one side is made larger than the other, thereby allowing only one way to open, and when applied to the feeding bottle readily opens, admitting the fresh air, and again closes so as not to allow the food to escape, working open as the child sucks and closes when it ceases to draw the food out from the bottle. The invention includes necessary fittings to hold or protect the valve and give free action.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 20.—N° 193.

FIRTH, William.—(*Provisional protection only.*)—"Improvements in the application of vulcanized or " unvulcanized india rubber in the construction of pumps, enemas, syringes, spray producers, and such like " instruments."

(1.) The employment of hollow balls or shells of india rubber fastened to the other parts of such instruments without cementation.

(2.) The employment, in connection with such balls or otherwise, of suitable and novel valves made from india rubber.

(3.) The employment of a tube or tubes in connection with said balls and valves.

(4.) The employment of the elasticity of india rubber as the fastening or fitting agent for said balls and valves to the other parts of such instruments.

(5.) The general arrangements of such balls, valves, and tubes in the formation of such instruments.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 20.—N° 194.

ROBINSON, Matthew.—(*Provisional protection only.*)—"Improvements in the manufacture of expanding " and contracting combs or reeds."

This invention relates to that description of combs or reeds in which the dents are placed between the coils of coiled springs, and consists in placing the dents between the coils by improved self acting mechanism.

The two coiled springs for holding the upper and lower ends of the dents of each comb or reed are fastened to a slide having a traversing motion imparted to it by means of a screw or rack and pinion, and each dent before it is cut from the flat wire passes between metal plates extending across the springs, but partially closed at the bottom by their own elasticity. At the lower ends of the plates there are two or more openings, near which there are two or more fingers fixed to a vibrating shaft, so that when the fingers are in their highest positions they shall be without the plates, but as they pass downwards enter the openings and pass through them transversely.

The traversing of the slide and coiled springs and the up and down movements of the fingers work in unison; that is, there is an up and down movement for each coil, and after the dent is cut from the flat wire it falls to the bottom of the space between the plates, and then the fingers press it through the partially closed bottom and between a coil of each of the two springs, and as the slide is traversing onwards another dent is cut and falls downwards and is pressed between another coil of each of the two springs, and so on continuously until the comb or reed is completed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 20.—N° 195.

CARLING, Robert, and CARLING, Thomas.—(*Provisional protection only.*)—"Certain improvements " in lubricating the interior frictional surfaces of steam or other motive power cylinders."

The novelty and feature of the invention consists in arranging or applying a disc or plate of metal to cover the whole area of the top of the cylinder, down the inclined surface of which lubricant flows to the sides of the cylinder and equal distribution thereof is effected thereby.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 20.—N° 196.

WOODLEY, John.—(*Provisional protection only.*)—"Improvements in apparatus for communicating or " signalling in railway trains."

This consists of a frame fitted to the top of each compartment of a railway carriage carrying an indicating disc and having apertures through which a cord leading to the guard's van or engine is carried. This frame consists of a bar carried by an upright, leading from the middle of the bar down through the roof of the carriage and each end of the bar carries friction pulleys between which the cord is led; on the top of the bar is a perforated disc parallel with the bar, and when the train is made up all the bars and discs are set lengthwise of the train and the cord led between the pulleys. Inside each compartment a horizontal rod is centred to the lower end of the upright and cords lead from this rod to handles at convenient positions within the compartment. When the attention of the guard is required one of the handles is pulled, which causes the horizontal rod, bar, and disc to move a quarter round upon the upright, the cord leading to the guard's van or engine is thus tightened and sounds an alarum and the guard can see which disc has been moved into the transverse position. At night a single lamp placed in a line with the disc will serve for all the carriages, as it will be clearly seen at ordinary times, while a perforated disc will be interposed when the signal is given; these perforations may consist of numbers, &c. A depending paul taking into a ratchet prevents the passenger returning the disc into position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 20.—N° 197.

LAKE, WILLIAM ROBERT.—(*A communication from Joseph Hale.*)—"Improvements in wood rings or "washers, and in machinery for manufacturing the same."

This invention relates to washers or rings of wood with the grain or fibre in the condition in which it is left by steaming, bending, and drying such washers, serving for use upon the axles of carriage wheels and with other revolving bodies, also for small valve seats and for packing rings. It also relates to helices of wood with the grain or fibre disposed in helical lines and in the condition in which it is left by steaming, bending, and drying such helices, not only serving to be subdivided into washers or rings, but also serving as a kind of tubular packing; as, for example, they may be employed in place of rubber tubing, which is now used to prevent the shafts of carriages from rattling where they are hinged to the carriage, or they may be used to pack the joint bolts of elliptic springs used for vehicles. It also relates to mechanism for winding strips of wood into helices, this part of the invention embracing the employment in connection with a rotating arbor of an inclined faced tube having a slot cut through the body of the tube at its end tangential to the inner and outer cylindrical boundaries of the tube, said slot having a cross area equal to the cross area of the material to be drawn through said slot to be wound. It also embraces in combination with such inclined faced slotted tube a directing trough, or a friction retarder, or a return feed screw and movable co-operative nut nippers. This mechanism operates to take strips of wood from a steam box and to wind them into helical coils on an arbor with the parts of the coils closely packed together, which coils are dried upon the arbor on which they are wound, and are used either as tubes of coiled material for any purpose for which they are found adapted, or are by one cut of a saw, through one side of the coil or tube parallel with the axis thereof, severed into rings or washers, which may be used for any purpose to which they are found adapted.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 20.—N° 198.

LAKE, WILLIAM ROBERT.—(*A communication from Lyman Reed Blake.*)—"Improvements in machinery "for nailing or pegging the soles of boots and shoes to their vamps or uppers."

This invention is designed for securing soles of boots and shoes to their vamps or uppers with nails, each of which is driven on an angle opposite to the angle of the next adjoining nail, though the invention may be applied to the nailing of other objects than boot and shoes. The operation of the mechanism is to cut from a continuous coil of wire pieces of a length having a definite relation to the thickness of the material where the piece of wire or the nail is to be driven. The said invention consists mainly in the employment of an anvil or work-support with a presser foot, so that between the said parts the thickness of the material is callipered and the relative position of the said parts is made to control the length of the nails to be driven, so that even in stock of variable thickness the nails may all be driven through the material or may fall a little short of coming through, or may be clinched or upset on the anvil, as deemed desirable by the operator. The anvil for operating on boots and shoes is made long, inclined, and taper, like a "horn," by which term it is called, and for convenience in shoe-work it is made so that it may be rotated about an axis passing through its tip. The said invention also consists in making the nail tube and driver so as to rotate about 180°, and so as to drive the nails in oppositely inclined directions, the nail tube at one time in each change of position being vertical in line with the wire proceeding from the coil so as to receive a piece cut off therefrom preparatory to its being driven. And the said invention further consists in making the end of the nail driver descend automatically to variable points corresponding to the thickness of the stock at the points where the nails are driven, and in this connection the delivery end of the nail tube and the parts therewith connected are changed in their position automatically by the thickness of the material operated upon.

[Printed, 2*s*. Drawings.]

A.D. 1868, January 20.—N° 199.

CLARK, ALEXANDER MELVILLE.—(*A communication from Alexandre Lagrafel.*)—"Improvements in "steam boilers."

These boilers are especially adapted for marine service, and have their whole surface exposed to the fire composed of tubes. The upper part consists of one or more chambers of semi-cylindrical form placed horizontally with a flat bottom forming a tube plate. This chamber serves as a steam and water space, and is supported by vertical water heating tubes at each angle, other vertical tubes closed at bottom are also fitted in the tube plate around the casing, the whole forming a furnace chamber. The two front supporting tubes are intersected by a horizontal tube serving to carry a row of inclined tubes bent up at one end and forming a roof to the furnace, the intervening spaces being covered with a brick lining; other vertical tubes filled with water and closed at bottom are also fitted in the tube plate before mentioned. A circulation is established in the several vertical tubes by placing diaphragms or partitions therein. A collecting tube may also be placed at the bottom of the boiler communicating with the vertical tubes, by means of which all saline matters or incrustations are readily removed.

[Printed, 3*s*. 6*d*. Drawing.]

A.D. 1868, January 20.—N° 200.

JOHNSON, JOHN HENRY.—(*A communication from John Henry Smith and Ellbridge Gerry Benedict.*)—"Improvements in ships for containing and transporting oils or burning fluids, also in raising such oils or "burning fluids, and supplying the same as fuel to the furnaces of steam ships, parts of which improvements "are applicable to the ballasting of ships with water."

This invention consists in providing the hulls of ships with a special compartment for containing oils and burning fluids, and in protecting the same with water contained in a water chamber and tank between 2 decks. The oil compartment is provided with pipes for supplying and discharging the oils and burning fluids, and for supplying the compartments with water or air for the purpose either of raising the oils by hydrostatic or pneumatic pressure, or for supplying water to be used as water ballast.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 20.—N° 201.

PARSONS, JOHN.—"Improvements in certain parts of double barrel breech loading fire arms."

This invention refers to the "lump" situated underneath the barrels of most double barrel sporting breech loading fire arms, and consists in making the lump either of two half lumps of iron or steel welded to the sides of the barrels and connected together by brazing, screwing, or rivetting, or of a single lump welded to one of the barrels in such a position that it occupies the proper place between the barrels.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 20.—N° 202.

NEWTON, ALFRED VINCENT.—(*A communication from The Singer Manufacturing Company (Incorporated).*)—"Improvements in sewing machines, part of which are applicable to other purposes."

The improvements in sewing machines are as follows:—

1. Means for guiding needle bar and adjusting needle thereon by means of clamp.
2. Adjusting tension of needle thread.
3. Compound shuttle driver and slide, and mode of working same.
4. Adjusting tension of shuttle thread.
5. Creating friction between belt, pulley, and belt.
6. Hinging bed plate to frame.
7. Various arrangements for working feed wheel, applicable also in other cases where an intermitte axial motion is required.

[Printed, 2*s*. 10*d*. Drawings.]

A.D. 1868, January 21.—N° 203.

THOMAS, EVAN.—(*Provisional protection only.*)—"An improvement in the construction of miners' safet "lamps in such a manner as to enable petroleum or other mineral oils to be consumed therein."

The invention consists in the construction of the miner's safety lamp in such a manner as to enabl petroleum and other mineral oils to be consumed therein in lieu of animal or vegetable oils as at presen used, and the production thereby of an increased light to the miner with considerable less danger of explosion when the lamp is used in mines where gas exists, and also for other purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 21.—N° 204.

SPENCER, John Frederick.—(*Provisional protection only.*)—" Improvements in steam boilers."

Forming the heating surface by two tiers of vertical water tubes of different diameters to admit of renewal and repair.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 21.—N° 205.

SPENCER, John Frederick.—(*Provisional protection only.*)—" Improvements in regulating and working " the valves of steam and other engines."

Closing the valves of steam engines by use of a cylinder having a piston acted on by atmospheric or other pressure combined with a vacuum on the opposite side, and thus acting as a spring applied to valves worked with escapement gear.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 21.—N° 206.

BROWN, Charles Williams.—(*Provisional protection only.*)—" Improvements in the construction of " truncheons used by police and other counstables and persons."

This invention consists in adapting a swivel or revolving piece of metal to the bottom of the handle of a truncheon, and in fixing to such said piece the piece of leather or other material intended to go round the wrist of the person using the truncheon, so as to allow of the truncheon being turned round in the hand by an adversary without the possibility of injuring the wrist of the person using the truncheon.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 21.—N° 207.

DAVIES, John Lacey.—(*A communication from Richard Scrivener.*)—(*Provisional protection only.*)— " Certain improvements in the method of retaining and securing corks or stoppers in bottles or vessels " containing aërated liquids, and in apparatus connected therewith."

The novelty and feature of the invention consists in the novel employment and use of a fastener permanently attached to the bottle, and consisting of a strong wire or plate, bent or formed so as to extend down the sides of the cork and the bottle, the middle portion against which the top of the cork presses being waved or zig zag in form, and the two extremities of the wire or plate are turned outwards at right angles to form pivots or hinges which fit into eyelets or rings formed in a separate wire encircling the bottle neck.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 21.—N° 208.

HAVELL, Charles Richard. — (*Provisional protection only.*) — " Improvements in water-heating " apparatus."

The apparatus consists of a closed box or chamber placed in the water to be heated, and containing a coiled perforated tube supplied with gas from a supply pipe, said tube passing away through an inclined channel for supplying air for combustion. The products of combustion pass off at a central chimney, by which access is had for igniting the gas jets, or this may be effected by the aid of the air channel. Charcoal or other fuel may be used for heating instead of gas.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 21.—N° 209.

DICKINS, William.—(*Provisional protection refused.*)—" Improvements in the manufacture of boots " and shoes."

This is to dispense with " bottom fillings." The edge of the upper is secured between the inner sole and a middle sole, the whole being stitched together by machinery. The outer sole is secured by stitching or by nails or pegs to the middle sole, no " filling " being necessary.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 21.—N° 210.

LE GRAS, Louis Napoleon.—(*Provisional protection only.*)—" Improvements in churns."

This relates to churns in which up and down motion in a cylinder is given to a perforated plate from which a tube provided with a valve leads to the top of the cylinder. The invention consists, 1, in closing the tube altogether at a convenient distance from the plate, and in perforating the tube so that in the down stroke the milk or cream is forced out through these perforations against the sides of the cylinder. 2, in using two perforated plates surrounded with a cylinder to form a box, the perforations of the two plates being connected by tubes. 3, in a plug at the lower end of the perforated tube, the bottom of the plug being perforated. 4, in a spring below the perforated plate or plates to assist in the up stroke.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 21.—N° 211.

LEE, Thomas Vincent.—" Improvements in producing charcoal, fuel, and firelights from peat, and for " kilns and machinery to be employed therein, such machinery being also applicable for the making of coal " dust into coke."

Machinery for pulping peat and forming it into blocks, which may be used in like manner for coal dust either with or without admixture; also for kilns or retorts for drying and charring peat or otherwise, as also for a wrapper of prepared wood applied to fire-lights to obviate the objectionable smell and increase their utility.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 21.—N° 212.

COLEMAN, William Juby.—" Improved apparatus to be employed in the manufacture of beer and " wine finings."

Consists of an arrangement of covered vats provided with mechanical stirrers in which beer finings or other admixtures may be kept constantly agitated during the manufacturing process, and the gaseous matter evolved during the process carried off into the atmosphere by an exhaust fan communicating with the vats.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 21.—N° 213.

LONG, John Jex.—(*Provisional protection only.*)—" Improvements in machinery or apparatus to be " used in the manufacture of matches or other similar articles."

The feature of novelty which constitutes this invention is the special appliance to be used for the purpose of adjusting the poition of splits or splinters of wood used in the manufacture of matches or other similar articles as they pass from the hopper for the purpose of being fixed in the frames in which they are held for having the igniting compound attached to them.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 21.—N° 214.

JOHNSON, John Henry.—(*A communication from John Davis.*)—" Improvements in apparatus for " indicating the relative positions and movements of certain of the heavenly bodies."

This invention relates to a peculiar construction and arrangement of apparatus which the inventor proposes to call "planetelles" (signifying planets and satellites), such apparatus having for its object the representing the axial motion of the sun and the axial and orbital motions of the eight primary planets, and also the various motions of the satellites round their primaries. According to this invention it is proposed to employ for the purpose of representing the axial motion of the planets and the arbital motions of the satellites gearing carried on the outer ends of arms radiating from a series of revolving concentric shafts, the motion being conveyed from the said concentric shafts to the said gearing through the medium of other shafts paralrel to and carried by the radiating arms. It is further proposed to combine with the mechanism above referred to a horizontal revolving inclined disc, rim, or crown wheel situate at the outer end of one of the radiating arms for the purpose of representing the ascending and descending nodes of the moon, that satellite being carried on the upper end of a vertical spindle which is bent at right angles at its lower extremity and there rests upon the inclined rim of the disc referred to, an antifriction roller being employed to facilitate the traversing of the spindle over the rim. This spindle is hinged or jointed to a pivot situate inside the rim so as to allow it to rise and fall in passing over the inclined surface of the rim. All those planets whose axes incline more or less to the plane of their orbits, such, for example, as Venus, the Earth, Mars, Jupiter, and Saturn, are pivotted at one pole, so that by their own weight or gravity their axes will be constantly inclined at the desired angle to the planes of their respective orbits. Each of the concentric shafts hereinbefore referred to carries a toothed rim into which gear pinions on the inner ends of the several shafts carried by the radiating arms above mentioned, thereby imparting motion thereto. The several concentric shafts are further provided with worm wheels or other gearing contained within the stand of the apparatus and deriving motion from endless screws or gearing driven from another shaft by a winch handle. The arrangement of the gearing on the outer ends of the several radiating arms varies in accordance with the functions to be performed, where satellites exist extra gearing is required to produce the orbital motions of such satellites round their planet, but in all cases such gearing is driven from the shaft carried by the radiating arm in connection with that particular planet, each planet and its satellites being actuated by a separate radiating shaft of its own, which imparts not only the axial motion to the planet, but also the orbital motion to its satellites if any exist. Of course it is understood that the number of teeth in the gearing employed is so proportioned as to produce the several revolutions of the planets and satellites at the correct relative speed.

[Printed, 1s. 6d. Drawings.]

A.D. 1868, January 21.—N° 215.

JOHNSON, John Henry.—(*A communication from Henderson Ross.*)—" Improvements in furnaces."

This invention consists in providing puddling and other furnaces with a detached metallic " clamp " furnished with a water chamber; also in providing the furnace with a metallic fire chamber, neck, or throat, and stack or chimney, such fire chamber, neck, and stack also forming water chambers. The water chambers of the back part of the furnace, bridge wall, clamp, neck, and stack must be provided with pipes for supplying them with water, and also pipes for carrying off the heated or " waste water." The back end and that portion of the crown of the furnace directly over the fire chamber and bridge wall are made of iron and furnished with united water chamber. The upper part of the stack of the furnace may be constructed of brick or iron, with the bottom course of fire brick lining resting on the offset, or the whole stack may be constructed with the chamber extending from the bottom to the top of it. If desired the sides and clamp may be so constructed as to form one part with a single water chamber in lieu of being composed of several parts. The operation of this invention is as follows :—

Water is conveyed into the different chambers at the lowest point and carried off at the highest point; by thus supplying and carrying off the water the chamber will always be kept full of cool water. The stack with its water chamber may be used for generating steam, which may be utilized for any desired purpose. By this invention a saving in bricks, time, and cost of repairing the neck and fire chamber of the furnace is effected. The fire chamber and throat, moreover, are not liable to become enlarged and changed in form, hence the action of the furnace will always be uniform, which is a great desideratum, especially in furnaces used for the manufacture of iron and steel.

[Printed, 8d. Drawing.]

A.D. 1868, January 21.—N° 216.

DAVIS, William.—" Improvements in the method of fastening bags made of paper or other material for " the conveyance by post or otherwise of samples of grain, seed, textile fabrics, and other articles."

This invention relates to an improved method of fastening bags made of paper or other material by providing the neck of the bag with a flap terminating in a tuck having arms projecting laterally. This tuck being divided longitudinally each half will pass through a slot of the width only of the neck of the tuck cut for that purpose in the body of the bag.

[Printed, 10d. Drawing.]

A.D. 1868, January 21.—N° 217.

NEWTON, William Edward.—(*A communication from John Marcus Boorman.*) — (*Provisional protection only.*)—" Improvements in rotary steam and other engines."

The engine is formed of two cylinders, one placed concentrically within the other. The inner one is mounted on a hollow axle, from which extend hollow curved arms connecting with valves or cocks at the periphery of the inner cylinder. When the cocks are open steam rushes from the central shaft along the curved passages into chambers formed between the inner and outer cylinders by moveable steam stops, against which the steam exerts its elastic force and drives round the cylinder.

[Printed, 6d. Drawing.]

A.D. 1868, January 21.—N° 218.

BRINSMEAD, Henry.—" Improvements in thrashing machines."

This invention consists, firstly, in effecting the operations of thrashing, chopping, and bruising the straw, dobbing wheat, and removing the awn from barley by the use of two or more cylinders and concaves at one and the same operation instead of as heretofore by first thrashing and separating the corn from the straw and afterwards chopping and bruising the straw by other and distinct apparatus or parts of apparatus. Secondly, in the application and combination with the above thrashing and chopping cylinders and concaves of a set of riddles for effecting the separation of the grain from the chopped straw and chaff; and, thirdly, of a fan elevator for raising the chopped straw and chaff to the stack, this elevator creating the necessary current of air for separating the chaff from the corn; and, fourthly, in combining the thrashing, chopping, and dressing apparatus with the elevator so as to form together one portable and compact machine, and mounting the same upon a suitable carriage of two or more wheels, and in the general arrangement of the apparatus.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, January 21.—N° 219.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Alfred Paraf.*)—(*Provisional protection only.*) —"Improvements in liberating the coloring matter of madder and similar vegetable substances from the "ligneous matter or cellulose with which it is combined in the plant."

The object of this invention is to liberate the coloring matter of plants from the ligneous matter so that practically the whole quantity of coloring matter may be utilized. The invention is applicable to the liberation of the coloring matter of madder root and similar vegetable substances. The invention consists:—

1st. Of a compound process of liberating the coloring matter of the plant by dissolving the cellulose by the action of cupric oxyde with ammonia, and then separating the coloring matter from the insoluble compounds of copper formed during the said solution.

2nd. Of a compound process of liberating the coloring matter of the plant from the sugary and ligneous matters thereof by washing the plant (previously reduced to powder) with water, dissolving the cellulose as above, and separating the coloring matter from the insoluble compounds during solution.

The patentee describes four methods of separating the coloring matter and copper, which are,—

1st. The decomposition of the insoluble compound after filtration and washing by sulphuretted hydrogen in the presence of alcohol, which dissolves the coloring matter as fast as set free. After which the coloring matter is obtained from the filtered alcoholic solution by concentration until crystalization takes place, or by precipitation by acetic acid.

2nd. The decomposition of the compound after filtration and washing as above by sulphuretted hydrogen, but in the presence of water, the filtration of the precipitates formed, and the extraction of the coloring matter from the precipitates by boiling alcohol. The coloring matter is obtained from the alcoholic solution by crystalization or precipitation, as in the preceding mode.

3rd. The decomposition of the compound after filtration by the action of hydrochloric acid, the mixture of the compound and a dilute solution of the acid being boiled for about ten minutes or until the copper is dissolved in the form of a chloride, and the excess of ammonia neutralized while the coloring matter remains as a precipitate which is separated by filtration and washing.

4th. After the solution of the cellulose the latter is permitted to remain in the liquid, the insoluble compound of the coloring matter and copper is decomposed by the addition of hydrochloric acid, which also neutralizes the excess of ammonia, causes the solution of the copper in the form of a chloride and precipitates the cellulose and coloring matter. The mingled precipitates are separated from the solution of the chlorides of copper and ammonium by filtration and washing.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 21.—N° 220.

BROWN, ANDREW BETTS.—"Improvements in actuating the valves of engines worked by steam or other "fluid."

This Provisional Specification describes the connecting the rod of the sliding valve of an engine to a plunger working in a cylinder at the end of the valve chamber. The plunger has fixed to its end a piston of larger diameter and which works in a corresponding enlargement in the cylinder. Steam is at all times admitted to the enlargement in the cylinder, and by pressing against the outer ring of the piston which projects beyond the plunger tends to press the piston to the end cover of the cylinder and so draw over with it the sliding valve of the engine. When the sliding valve of the engine is to be moved in the opposite direction steam is admitted into the valve cylinder to the back of the piston, and by acting upon the whole of its area presses it back; when the sliding valve is to be again shifted the back end of the cylinder is by opening a valve opened to the exhaust. This Provisional Specification also describes modes of alternately opening this valve and admitting steam to the back of the piston.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, January 22.—N° 221.

DANCHELL, FREDERICK LUDWIG HAHN.—(*Provisional protection only.*)—"Improvements in machinery "and apparatus for preparing, shaping, and drying peat and other vegetable and mineral substances."

My invention consists in an improved machine for macerating or preparing peat and other substances consisting of two grooved rollers working within a grooved case; the peat is forced into a trough supported on rollers, and is cut into blocks by wires distended on cross arms. The macerator is mounted on rails laid on the bog or drying ground, and the troughs containing the blocks are placed side by side and left to dry; or the blocks to be dried are delivered from a moulding machine on to an endless band traversing through a drying stove, through which currents of air are forced or drawn, the endless metal band on which the blocks are delivered deposits them on to another band placed below, and in dropping from one band to the other the blocks fall over to expose another surface to the action of the currents of air. Several of these endless bands may be used, or the blocks may be carried by an Archimedean screw from the moulding or macerating machine and deposited on the upper end of the series of inclined floors, down which they roll by their own gravity; these floors are placed in a shed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 22.—N° 222.

DIXON, John.—(*Letters Patent void for want of Final Specification.*)—"Improvements in the construction "of floating saloon baths."

The use of a tube or pontoon or other floating material, on the top of which is constructed a platform on which are placed cabins or dressing rooms & depending from which is the bath made of open or lattice work to allow the water to flow freely through.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 22.—N° 223.

HARROWER, Peter, and STUART, John Chiene.—(*Provisional protection only.*)—"An improved "spray producer for the production of medicated vapours."

This invention, under one modification, consists in constructing the steam generator in the form of a vertical hollow, internal and external, walled conical tubular vessel of a double tubular or annular form in horizontal section and triangular in radial vertical section by having the lower part of its outer case cylindrical, either attached to or formed by the upper part of the ordinary hollow vertical cylinder, forming the main portable case containing the usual spirit or other lamp, passed in through a door or lateral opening in the side, near the flat bottom on which the lamp rests and the whole stands, but having the handle secured to and projecting out laterally from the lower part of this case, where there is little or no heat, for greater convenience in its operation and use than heretofore. This improved construction of the steam vessel is set concentrically over the lamp, and has a much longer and greater heating surface and funnel, besides giving a narrow tubular water space all round the lower and greater part of the heating surface, and a greater height and capacity of steam space at the top of the boiler, above the water inlet level, exposed also to a small part of the direct heating surface of the top, so as to ensure pure steam, slightly dried or super-heated, passing off at the very top, where the branch pipe is formed for inserting and jointing the back end of the steam tube of the actuating nozzle, through which the jet of steam acts, which are as short as possible to prevent condensation therein. All which improvements and advantages make this apparatus more perfect in its action than those heretofore in use. The steam tube and nozzle being set, by preference, in a horizontal position, while that of the liquid nozzle, attached to it at right angles, descends vertically from it into the phial or other small vessel containing the medicinal or other liquid desired to be made into fine spray or vapour, placed at the side of the main case, within a small sheath or case, attached near the upper part thereof for its reception, and inserted therein, by preference, from the under side of the sheath, so as to go up over the liquid tube through the open mouth or a hole in the cork for the purpose until the tube reaches to near the bottom of the liquid at the time the phial is quite raised to its proper position when a hinged bottom is then clasped up by its own elasticity or fixed by any other equivalent convenient fastening preferred, all without requiring to disturb the position of the duplex spray producing nozzle, which can thus be always fixed and jointed in the steam branch pipe or faucet in its proper position ready for use. The spray producing tubes are of the usual well-known construction and made of glass, metal, or other substance which is proof against the action of the chemicals to be used and the hot steam. The water orifice for filling the boiler is placed at such a height or position as to regulate, shew, and ensure that the boiler shall be sufficiently and yet not over filled with water at any time, and is by preference stopped by a plug of cork, wood, or india-rubber; but it may be stopped by a screw head or stop cock, if desired.

Another modification of this said invention or improved spray producer, for the production of medicated vapour, consists in putting the medicinal substances in a solid, powdered, or in a partially fluid state, into a small glass boiler or other vessel or retort capable of standing the heat and chemical action of the substances placed within it, so placed over the top of the end of the heating chimney that the heat from the lamp escaping thereat will heat the vessel and volatilise the matters within it, which thus rise in the vessel and pass off by a tube in it, so as to be conveyed and escape either by an open orifice or some of the well-known forms of nozzles used for spray producers, so near to the steam nozzle as to cause the jet of steam therefrom to draw the vapour or gas from the tube of the heated vessel and combine with it in the form of a fine medicated spray or vaporous steam in a direction favorable for inhalation.

The steam tube and nozzle in this arrangement is formed of metal and conveyed upwards from the top of the super-heating steam chamber before named, and bent so as to deliver the jet in a horizontal direction and position adjacent to the escaping tube of the volatilising vessel, which may be made in the form of a tube or globe, or of a cup or saucer shape with a lid and tube for conveying away the vapour as it is volatilised, and the vessel itself and tube may be made of glass, porcelain, or metal enamelled, or other material or substance employed for the making of vessels for boiling chemical substance, and which will stand their action and the heat necessary for so doing, and this boiler is placed in a small fixed or a [portable open metal frame at the top of the steam boiler.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 22.—N° 224.

BROADBENT, Charles Ralph.—" Improvements in the manufacture of shoes."

The said improvements consist in making shoes of paper, the uppers or top parts and the soles being cut from that material and cemented or otherwise fastened together.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 22.—N° 225.

BROOMAN, Clinton Edgcumbe.—(*A communication from Alexandre Clavel.*)—" A new or improved " mode of producing a coloring matter."

This consists in the production of a red coloring matter by the oxidation of a product isomeric with naphthalamine, which is obtained by distilling naphthalamine and taking the products of higher distillation to mix with the napthalamine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 22.—N° 226.

THOMPSON, Walkden, and STATHER, Thomas.—" Improvements in mills for grinding or crushing."

This relates to mills in which the material to be operated upon is supplied to a circular drum in which beaters having a rapid rotary motion are fitted, and which grind or crush the material against the inside of the drum or a revolving ring in its centre.

The discharge aperture is made at the lower part of the drum instead of at the upper, and is covered with wire screens or perforated plates, so that by having different sized meshes or perforations the grinding may be regulated to any degree of fineness or roughness. For grinding grain the beater shaft passes through the lower part of the feed hopper and has a screw or pins to feed or agitate the grain. A spout admits a current of air. For very light substances the discharge aperture is made at the upper part of the drum, and an inclined screen fitted in a box is employed upon which the material ejected from the drum falls; all the fine parts pass through the screen, while those insufficiently ground run down its incline back into the drum.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 22.—N° 227.

BROOMAN, Clinton Edgcumbe.—(*A communication from Alexandre Clavel.*)—" A new or improved mode " of extracting coloring matter from madder."

This consists in extracting the coloring matter or properties from madder by petroleum or other carburet of hydrogen in the presence of mineral acids. The chief feature is the presence of the acids, without which the alizarine or flowers of madder would yield to the solvents only a very small part of the coloring matter or properties.

The advantage of the extraction of these properties is to be able to apply the coloring matter or properties of madder directly in printing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 22.—N° 228.

BENNETT, Solomon.—" Improvements in means or apparatus to facilitate the drying of grain, seed, " brewers' grains, and other matters."

For this purpose a close chamber is employed in which a number of plates are hung upon centres of motion, such plates being supported at a slight inclination from the horizontal and one above another, with adjacent plates inclined in opposite directions. These plates are connected together in two or more sets by links, and operated by cranks, eccentrics, or cams carried by a shaft to which rotary motion is given, the plates being thereby raised at one end and then suddenly dropped so that the matters thereon shall be thrown somewhat into the air and gradually caused to fall from one plate on to the next, and so on until they arrive at the bottom of the drying chamber, when they are removed by any suitable means.

The matters to be dried are by preference fed on to the top plate by a self-acting "Jacob's ladder," and it is preferred to supply the heat required directly from a suitable smoke consuming furnace, from which the products of combustion are led into the bottom of the drying chamber; and in order to prevent the heat at that part injuriously acting upon the matters to be dried, a serpentine plate or plates are placed over the aperture through which the products of combustion are led, and a quicker motion is given to a few of the lower inclined plates so as to prevent the matters to be dried resting too long thereon.

In order to prevent the heat passing off too rapidly from the drying chamber suitable guides or deflectors are placed between the inclined plates.

The moist vapour given off from the matters being dried is conducted away through a suitable pipe or tube.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 22.—N° 229.

TOMLINSON, Edward.—"Improvements in means and apparatus for ornamenting, printing, coloring, " enamelling, staining, embossing, cutting, creasing, bending, and manufacturing articles from wood and " other material."

The novelty of this invention consists in ornamenting, cutting, printing, creasing, bending, embossing, and manufacturing articles from wood and other materials at one operation, and in performing one or more of the said operations at the same time.

One of the principal objects of this invention is the covering of wood and other sheets of materials with color when flat in lieu of a paper covering after boxes and other similar articles are manufactured.

[Printed, 6*d*. No Drawings.]

A.D. 1868, January 22.—N° 230.

NEEDHAM, Richard.—(*Provisional protection only.*)—"Improvements in the valves of steam engines."

The invention relates to rotating or oscillating valves. The valve consists of two hollow conical plugs or antifriction cones connected together by a shaft, so that they may revolve together, but may work up to their seats independently of one another. Each cone is divided into two compartments, one of which communicates with the steam chamber and the other with the exhaust pipe, and openings in the two cones coincide with openings in the cylinder as the valve rotates so as to open the cylinder to the steam and exhaust pipes alternately. The opening which admits the steam is made of a form which admits a very small quantity at first and increases gradually, but shuts off all the steam at once.

In conjunction with the above I may use a "variable cut off."

[Printed, 6*d*. Drawing.]

A.D. 1868, January 22.—N° 231.

GOUNE, Thomas.—"An improved canteen."

This invention refers to the manufacture of canteens in two shells or halves closing upon each other, the one half or shell being provided with a hinged metal loop for holding a liquor bottle in position in the shell, and when in use the metal loop becomes a handle for the shell, which serves the purpose of a frying pan. The other shell may be used as a dish; when secured a strap passes round the canteen and through metal loops on the outside.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 22.—N° 232.

BARKER, Charles Spackman.—"Improvements in the construction of organs."

This invention relates to the substitution of electro magnetic apparatus supplemented by pneumatic levers for the mechanism usually employed in transmitting the motions of the keys, pedals, and draw-stops of organs, and in the use of means for economising the electric force.

[Printed, 2*s*. 4*d*. Drawings.

A.D. 1868, January 22.—N° 233.

GRAY, Thomas Wood.—(*Provisional protection only.*)—"Improvements in lightning conductors."

The fitting of lightning conductors to the composite vessels of wood and iron and to iron vessels with wood masts, and the avoidance of any connection, if possible, with the iron in the vessel, and formation of a distinct line of conductors.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 22.—N° 234.

DENNIS, William.—(*Provisional protection only.*)—"Improvements in letter boxes, letter pillars, and " such like depositories."

As regards letter boxes the improvement consists in constructing the box with or without a fan wheel at the aperture, and dividing the box at about the centre thereof with two pieces of metal of a triangular form, somewhat similar to the letter **V**, and either with or without a flap joint near the point thereof.

And as regards letter pillars the improvement consists in employing a bag to receive the letters and in causing the opening of the doors of the pillar to close the mouth of the bag, so that the letters therein may not be tampered with, and the bag can only be opened at the head quarters of the post office.

Other mechanical contrivances are employed to prevent the introduction of any instrument at the flap through which the letters are passed from the outside into the pillar to prevent extraction of the letters.

Another improvement consists in connecting the flaps of letter pillars with a signal or disc to shew if the flap is open so as to prevent wedging or otherwise, keeping the flaps open for any length of time by dishonest persons for the purpose of extracting letters from the inside of the pillar.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 22.—N° 235.

COOK, Thomas.—"Improved machinery for uniting together materials employed in the manufacture of " boots and shoes, saddlery, driving bands, and such like articles as require to be strongly united " together."

This invention consists in carrying the uniting wire at the back of the machine, where a piece is cut off at each movement of the machine, and the cut piece is moved under the plunger of the machine, by which it is forced through the materials to be united.

The piece that supports the work is forced up to a stop by a spring or weight, and is connected with the wire cutting instruments, by which the length of the cut piece of wire is always proportionate to the thickness of that part of the work which it has to unite.

The work is moved forward by the action of the machine.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 23.—N° 236.

ROWLEY, Thomas.—(*Provisional protection only.*)—"Improvements applicable to the soles and heels of " boots, shoes, clogs, and other coverings for the feet."

The features of novelty in this invention consist in the use and application to the under surface of the soles and heels of boots, shoes, clogs, and other coverings for the feet of suitable shaped studs, projections, or strips of suitable material screwed to such soles and heels, and which are trodden upon in the act of walking, instead of direct on to such soles and heels.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 23.—N° 237.

ORAM, William.—"Improvements in apparatus to be employed for heating buildings and for other " heating purposes."

The novelty and feature of the invention consists in taking or receiving the steam from the boiler or steam generator into the first length of pipe, and continuing such piping to any required length throughout the building, and returning the steam to the boiler by introducing the last length or other extremity to the boiler below the water line.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 23.—N° 238.

STEWART, David Yoolow.—"Improvements in the manufacture of cast iron pipes and similar articles, " and in the moulds and arrangement of apparatus connected therewith."

This invention relates to a system in which the cores made and more or less dried apart are at once adjusted in the undried moulds, whilst the latter with the cores in them and by preference mounted on carriages are placed in the stoves in the inclined or vertical positions in which they are to receive the melted metal, the metal being run into them in the stoves as soon as convenient after they are sufficiently dried.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, January 23.—N° 239.

HODGE, Henry.—"Improvements in gas stoves for heating purposes."

First. Air is supplied to a gas stove by a shaft or passage from outside the apartment or place in which such stove is placed. There is no communication between the interior of the stove and the air in the apartment. Water and air or either of them are or is used to convey and distribute the heat.

Second. A stove embodying first part, water being used to convey and distribute the heat, is constructed as follows:—One cylinder or vessel is placed within another, the space between the two serving as a boiler. Circulating pipes are connected into the boiler, so also are filling, cleaning, gauge, and other connections. The gas jets are of any ordinary kind. The products of combustion are conveyed away by a flue.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 23.—N° 240.

KIRK, George, and MURRAY, Walter.—"Improvements in self acting mules and billies for spinning "and doubling wool or other fibrous substances."

The novelty consists in,—

Constructing, combining, arranging, and applying mechanism or apparatus for spinning and doubling yarns of wool or other fibrous substances so as to be self acting in its operation, and to facilitate the converting of hand mules and other similar machines now in use into self-acting machines.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 23.—N° 241.

SANDERS, John Cross.—"Improvements in door, shutter, and bell knobs and furniture."

A mould is prepared of the shape which it is intended the exterior of the article shall possess, and glass is poured therein in a molten state, any desired pattern being then impressed upon the upper surface of the glass whilst in the mould by means of suitable stamps or dies. When cold, the glass is removed from the mould, any desired portions of the pattern painted, and then mounted in metallic mounting, the effect of brilliancy being given to the pattern by means of metallic foil or other analogous material placed between the glass and the metallic back or mounting.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 23.—N° 242.

BOTTOMLEY, William.—(*Provisional protection only.*)—"Improvements in milling machinery."

The special purpose of utility in this invention consists in preventing cloths from being "nipped" and thus damaged during the process of milling by the adoption of a separate driving shaft and the use of intermediate gearing. Further results obtained are greater steadiness of motion in the machine and greater durability of the various parts. Narrower and therefore less costly belting may be used, as less power is requisite to drive the machine.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 23.—N° 243.

GOULDING, John.—(*Provisional protection only.*)—"Improvements in looms for weaving."

The purport of this invention is to weave figured fabrics in what are known as swivel looms with a greater variety of colours or shades either on plain or figured grounds and by a much simpler arrangement of parts than is customary. For this purpose I use for each figure a series (single or double as required) of parallel concentric nicked vertical plates, swivels, or shuttles, having projecting fulcra in parallel bars extending the width of the warp under operation. The bars are bolted together, being kept convenient distances apart by means of ferrules, and (in preference) by means of a small shaft are supported at either end and immediately in front of the going part by levers having their fulcra in the end frames of the loom, but also connected by intermediate levers with the "swords" which carry the going part. At the back of each bar and upon the projection of each plate, swivel, or shuttle is cast a segmental pinion, into which is geared a horizontal rack (actuated by a cord through the usual jacquard, and aided by a lever driven from a tappet on the crank shaft), which imparts a rotary motion when requisite for taking up the warp threads to weave the figure, the top of each plate being furnished on its front side with a bobbin of weft of the desired colour or shade. The purport of a double series of plates is more especially by placing the upper series at distances intermediate with the lower series so as to produce intermediate figures upon the piece when woven and so to dispense with a lateral motion of the bars carrying the swivels which would otherwise be necessary. By the motion given through the connection therefore of the swivels and bars with the going part through the aforenamed levers and the motion imparted through the racks to the swivels (which during their rotary motion take up the warp threads where the pattern or figure is required) the figures are woven in their respective shades or colours. The weaver can also see the state of each bobbin of weft which is pressed upon by a spring and rotates upon a plain spindle.

A uniform tension is obtained by lifting the swivel or shuttle carriers up and drawing them back by the levers before referred to.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 23.—N° 244.

DICKINSON, Henry John.—"Improvements in tables adapted to be employed for playing billiards or "other games with balls and also for dining or other uses."

The object of the invention is that the table may be varied in height and generally adapted for use either for billiards or such like games or for dining or such like uses.

For this purpose the ordinary deep framing is avoided, it being in the way of the knees when in use as a dining table, and the cushion frame is deepened and strengthened. There is also a shallow frame strengthened with iron plates to support the slate bed, or the deep framing is set further in under the table. The legs are of length adapted to the lowest height of use, and the raising is effected by hinged tressels or legs with screws passing through nuts, by turning one or the other of which the table is raised one end first, when extra legs or supports are placed under those to the table.

The lowering is similarly effected in the opposite direction.

The means of raising and lowering are applicable to other tables.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 23.—N° 245.

RAGLAND, Henry Miller.—(*A communication from Cesare Osmani.*)—"Improvements in tanning hides "and skins."

This Provisional Specification describes the subjecting skins, after they have been limed and unhaired, first, to a fermenting process and then to the action of Italian mustard seed in order to open the pores of the skin and render the subsequent tanning processes much more speedy.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 23.—N° 246.

ALLIBON, George, and **MANBRÉ**, Alexandre.—"Improvements in steam boilers."

This Provisional Specification describes a vertical boiler in which the fire box is enclosed by a cylindrical water space, at the top of which the draught is turned back and descends all round between it and another cylindrical water space; at the bottom it passes to the chimney.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, January 23.—N° 247.

PRICE, Strother.—(*Provisional protection only.*)—"An improved mode of and means or apparatus for "turning on and off the supply of gas to houses, also applicable to turning on and off the supply of other "fluids."

A weighted lever is attached to the tap and a wire or cord led from the lever to the hall or other convenient part of the house. The wire is pulled to raise the lever and so turn on the gas, and the wire is secured until the gas is to be turned off; then by releasing the wire the weighted lever falls and turns the tap; one or more springs ensure the fall of the lever.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 23.—N° 248.

TILDESLEY, Matthew, and **BIRD**, James.—"Improvements in the construction of furnaces, stoves, "and fireplaces."

This invention has for its object the construction of furnaces, stoves, and fireplaces generally in such manner that the air may come in contact with the fire and a draught may be created upon all sides of the fire and at the bottom, the top alone being closed, by which construction we obtain perfect smoke consuming fires.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, January 23.—N° 249.

GARCIN, Caroline, and **GARCIN, Amelie.** — (*Provisional protection refused.*) — " Improvements in " sewing machines."

This invention relates to the driving of sewing machines by a self contained motive power (derived from coiled springs) that will maintain them in action for a considerable time.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 23.—N° 250.

SEVERN, George.—" Improvements in valvular apparatus for giving vent to and for excluding air from " casks or other vessels and in bungs for closing the same, partly applicable as valves for other purposes."

This Provisional Specification describes improvements in arranging self acting apparatus for giving vent to casks or other vessels as the liquor or fluid is drawn off therefrom.

[Printed, 8*d.* Drawing.]

A.D. 1868, January 24.—N° 251.

JENNINGS, William John.—" Improvements in the permanent way of railways."

1st. Forming the chair in two or more parts, the base being in all cases composed of one piece, and one or both cheeks sliding in grooves formed in the base. The cheeks of the chair may be lined with wood, and are wrought into close contact with the rail by taper bolts.

2nd. Improved chair fastening which consists in the application of screw bolts with a deeply cut thread to increase the grip of the fastening upon the wood.

3d. Consists of a nut and bolt lock which prevents the nuts or bolt heads working loose.

4th. An improved method of fastening fish plates in permanent way, which consists in tapping one of the first plates with a screw thread, the other fish plates being left plain. The fish plates and rail are then secured together by means of a nutless bolt, locked as described in No. 3. the thread of which corresponds with that tapped in one of the fish plates, all necessity for using a nut is thus obviated.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, January 24.—N° 252.

STORER, James, and **STORER, David.**—" Improvements in vessels or cannisters to be used for holding " liquids, solids, and other substances for the purpose of economising space and freight."

The feature of novelty which constitutes this invention is,—

The formation of the canisters or vessels approximately square, that is, with sides partly flat and partly circular, so that a great saving of space is effected in the stowage or shipment of such cannisters.

[Printed, 8*d.* Drawing.]

A.D. 1868, January 24.—N° 253.

SMALL, Andrew. — (*Provisional protection only.*) — " Improvements in apparatus for removing excre- " ments."

In carrying out the invention a closed cesspool is to be provided (where it does not already exist) in connection with the soil pipe of one or more water-closets. An inlet pipe in continuation of the soil pipe is made to project into the cesspool at a point a little below the top, whilst an overflow pipe for water is fitted to the cesspool near the same level and communicates with a drain or sewer. For the solid matters a portable receptacle is provided in the form of a covered pail or can, which is made with a lateral opening near the top, to be passed upon the projecting inlet pipe in the cesspool, whilst a number of perforations are made in the side and communicate with a covered external passage, which is carried down to the bottom of the vessel. When this receptacle is put into its place in the cesspool it becomes filled with water by the passage last referred to, but the solid matters from the waterclosets gradually displace the water and themselves remain in the receptacle.

At suitable periods the portable receptacle is removed from the cesspool and another put into its place. The one removed has its inlet opening closed by an airtight stopper or cap, and it is conveyed away with others in a suitable cart or vehicle.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 24.—N° 254.

DE RUSETT, Edwin William, and **DALE, Richard Farrell.**—" Improvements in waterclosets."

The chief object is to allow the flushing water to enter the pan before the pan valve is opened and to retain water in the pan after it is closed. Reference is made to former Patents—No. 2546, 1865, and No. 2091, 1866.

A peculiar form is given to the tumbler, a prolongation thereof being radiused from the fulcrum of the lever, so that the pan valve is not opened until after the flushing commences, and is closed before the flushing ceases. When steam is used, as in the Patent of 1865, a flushing chamber, as in the Patent of 1866, has its cock or valve worked by racks from a prolongation of the lever, so that the cock is opened as soon as the plug rod is commenced to be raised and is not closed until the plug rod is home; a continuous flushing is thus obtained; but by a modification the flushing may be stopped when the plug rod is at the top and commenced again when the rod begins to descend.

For an ordinary closet the flow of the water from the tank is regulated by a valve worked from the lever near the fulcrum end; a continuous flushing is thus obtained, the action being the same as above explained.

Another improvement in the steam water-closets is a cock or valve which during the up and down movement of the plug rod first lets steam into a flushing chamber to flush the pan, then lets steam into a soil chamber to drive out the contents, and then again lets steam into the flushing chamber for a second flushing, the steam being meanwhile shut off from the soil chamber, so that the condensation therein produces a vacuum, opens a counterweighted valve to the pan, and draws the contents thereof out of the soil chamber.

The flushing chamber sucks in its own water by the vacuum produced by condensation.

In some cases the steam is used only to drive out the contents of the soil chamber, the flushing water being admitted from a tank.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 24.—N° 255.

CLARK, Alexander Melville.—(*A communication from Louis Auguste Gerin.*)—(*Provisional protection only.*)—" Improvements in means and apparatus for lubricating parts of machinery exposed to the action of " steam."

The improved means consists in the utilization of the steam in its passage to the cylinder; for example, as a vehicle for the introduction of the lubricating matter.

The apparatus consists of a cock placed between the grease cup and steam pipe, in the stem of which there is a solid plug having a groove or channel placed alternately in communication with the grease cup for receiving fatty matter and then with the steam pipe, the steam carrying it away to the part to be lubricated.

The lubricating apparatus is rendered self acting by gearing the rotating plug with the machinery, so that the supply may last as long as the motion continues either in an intermittent or continuous manner, or it may be otherwise operated.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 24.—N° 256.

WOODROFFE, Charles.—(*Provisional protection only.*)—" Improvements in travelling post offices and " tenders, and in apparatus for delivering and receiving mail bags and parcels."

This Provisional Specification describes apparatus by means of which bags may be delivered from or received into a railway carriage whilst it is in motion without its ever being necessary for the attendant to expose himself to the danger of leaving the interior of the carriage or leaning out from it.

Also an indicator for giving notice to the attendant when to prepare the apparatus for use.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 24.—N° 257.

BELL, Thomas Lesslie Gregson.—" Improvements in preparing oxide of iron for purifying gas, and in " treating the oxide of iron residues to obtain products therefrom."

This Provisional Specification describes, firstly, the preparing oxide of iron for purifying gas by precipitating oxide of iron in or amongst native oxide of iron; also a mode of obtaining precipitated oxide of iron, and also a mode of obtaining cyanogen compounds and ammonia from oxide of iron residues of gas making.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—N° 258.

WINSLOW, Kenelm John.—" An improved method of conveying rotatory motion to axles."

The features of novelty which constitute my invention are as follows :—

A method of rotating axles by means of two hollow drums in which are suspended two palls roughened or notched at the end, and so arranged as by means of a slight spring to act nearly vertically upon metal wheels or discs fixed on the axle and similarly notched or roughened; the palls thus working in a position nearly perpendicular greatly lessens their tendency to slip, and renders unnecessary the adoption of large toothed ratchets. A method of connecting the said drums with the motive rod by means of bands or chains, so as to give alternate action to the palls without the aid of any other machinery or gearing. A method of adjusting a slide rest inside the drums for the palls to work on to during their backward movement, so as to prevent noise where necessary. Also a method of applying the same principle of rotation to velocipedes, &c., by a single drum, and communicating the recoil movement by means of an india-rubber spring, the pall in this case being so arranged as to lift free of the ratchet when the machine is at rest.

[Printed, 8*d*. Drawing.]

A.D. 1863, January 25.—N° 259.

MASON, Jules.—(*Provisional protection only.*)—"An improved composition to be used as fuel for " household purposes, and the method of preparing, forming, or manufacturing the same."

The fuel is adapted for household purposes, and is manufactured of small coals and "duff" duly mixed with pitch or tar and afterwards compressed into blocks weighing from one to two pounds, or as required.

[Printed, 1*s*. Drawings.]

A.D. 1868, January 25.—N° 260.

LEWIS, John Milton.—(*Provisional protection only.*)—"An improved apparatus for securing watches, " purses, or other valuables when worn or carried in pockets."

This invention consists of a small double pointed flexible fastened to secure it to the person, and a spring clip of wire or other material attached thereto, to which the article to be protected is secured.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—N° 261.

DIXON, Charles William.—"Improvements in rotating slide-valves, and for improved suitable modes " of applying these said and other rotating valves to certain kinds of engines."

This invention relates in the first place to a novel construction of rotating slide-valve for engines which permits the use of that economical device termed expansion. It is made frusto-conical, hemispherical, or spherical-segmental, and its construction is of such a nature that waste of power in driving it may be prevented by reducing the friction caused by excessive adhesion to its valve-seat to a minimum.

It relates in the second place to improved modes of applying these said and other rotating valves to certain kinds of engines. One mode consists in two cog wheels, one being attached to the crank shaft and the other to the valve, and they are placed in gear with each other. This said mode of working the valve is suitable for small pumping engines having return connecting rods and crank-shafts. Another mode consists in two pitch wheels or pulleys, one on the crank-shaft or other revolving part of the engine and the other on the valve or valve spindle, and the former drives the latter by means of either an endless pitch-chain, friction band, or endless steel pitch band, as the case may be. This said mode of working the valve is suitable for rotative engines.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, January 25.—N° 262.

BOYD, John, and BOYD, Thomas Alexander.—(*Provisional protection only.*)—"Improvements in " winding machines and in pirns or yarn holders and shuttles, a part of which improvements is also " applicable to other machines requiring varying motion."

In one arrangement for obtaining varying motions a disc pulley driven by a belt or otherwise is nipped between the edges of two pulleys, one or both of which are to be driven. The disc pulley is carried by a lever or otherwise so that it can be moved by a cam or otherwise. In a modification of this arrangement the frictional driving pulley drives by its edge being nipped between two discs on the ends of two shafts, one or both of which are to be driven.

Another arrangement for obtaining varying motion is susceptible of various modifications, and in some of these a pulley for receiving a driving belt is applied eccentrically to a toothed wheel cylinder or shaft to be turned. If toothed wheels are employed these may be circular, and with teeth exactly like ordinary uniform gearing instead of having to be specially shaped, as in eccentric gearing as hitherto made; elliptical or oval wheels may however also be used. The eccentric pulley may be used for receiving the uniform motion or for giving off the varying motion from the train of gearing. A circular toothed wheel may be used instead of the belt pulley hereinbefore mentioned.

Another improvement in winding machines consists in fitting short tapered pins or spindles in the apices of the conical cups or formers to act as a centre on which to wind the yarn to suit pirns made without stems or spindles, but only with conical bottoms. The arrangement will also suit for winding cops on short paper or other tubes, or without tubes.

The improvement in pirns consists in making each pirn with a conical or other bottom of wood or other suitable material and with a tubular spindle of metal.

Another improvement relating to pirns relates also to shuttles, and consists in holding the pirn on the shuttle skewer by a flange or lip formed on a piece attached to the skewer shank, such flange entering a groove formed round the pirn bottom.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—N° 263.

KILBURN, Charles.—" Improvements in the construction of life and swimming belts, jackets, waist-" coats, and buoys."

This invention consists in forming cells or chambers in tanned canvas, each cell or chamber being filled with corks, by preference drawn corks, and laid in layers either longitudinally or at right angles with the belt or other article, and in rows of two, four, more corks as desired.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 25.—N° 264.

BROOMAN, Clinton Edgcumbe. — (*A communication from Charles Rochaz.*)—(*Provisional protection only.*)—" Improvements in breech-loading fire arms and in the manufacture of ammunition for the same."

1. Needle guns.—Three arrangements are described. In the first the trigger guard piece is pivoted below the barrel and locks the parts; it carries a wedge which takes behind a sliding breech piece, and its rear end is carried up vertically above the stock and held by a catch. The breech piece has an air chamber, and has the case of a spiral spring for actuating tht needle screwed to its rear end.

The piston or head of the needle carries a spring plate which has a hook at its rear end to take into a hook of the tumbler; these hooks are released by the trigger, and the spring then drives forward the needle to ignite the charge. In the second arrangement the breech parts are the same, but the guard is fixed, the locking being effected by an open handle hinged below the barrel; this handle has a wedge to come behind and lock the breech piece, and is itself held by a spring. In the third arrangement, which is described as applied to a double barrelled gun, the barrels have a lump which slides in a dovetail groove when the breech is opened and closed. The trigger guard forms the locking appliance by means of a wedge, and is itself held by a spring catch. Projections on the guard near the wedge take into corresponding projections on the cocks so as to cock the gun when the guard is lowered; the triggers act on springs to release the cocks to drive forward the needles; the cocks take into sockets on the heads of the needles. A projecting lump on the front of the breech piece prevents the cartridge coming against this piece so that an air chamber is formed. In all the arrangements a circular tenon on the rear of the barrel takes into a mortise on the breech piece, a caoutchouc washer being interposed to make a hermetic closing. Or the obturation may be obtained by two tubes inserted one in the other and extending into the charge chamber; these tubes have several slits, the slits of one coming opposite the full parts of the other; the explosion itself will thus close all escape. In each arrangement there is a safety appliance for preventing the action of the triggers when required.

2. Primings for needle gun cartridges.—Gunpowder in the form of paste is made into discs or otherwise, and the fulminate, which is also made into a lozenge or applied to a washer is attached to the powder disc, which thus forms the body or support of the priming.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—N° 265.

RITCHIE, Charles. — " Improvements in apparatus for utilizing heat for heating, warming, and " ventilating, whether such heat be procured by the agency of steam boilers, furnaces, or from other " sources."

This invention is based upon a similar system to that described in my Provisional Specification, No 2674, Sept. 23rd, A.D. 1867; and consists of a case or receptacle through which pipes or ducts heated by products of combustion from some suitable heating source, pure outer atmosphere is brought into this case or receptacle and passing over the pipes or ducts becomes warmed and enters the chamber or other space to be ventilated, or heated, or warmed; sometimes steam alone (or the reverse of the above construction or a combination of both may be adopted) is used for heating purposes, and at others steam and the products of the combustion used for generating steam in conjunction. This invention further consists of an arrangement for regulating the supply of gas, air, and water for ventilating and warming purposes. It also consists of an arrangement of rods or heat conductors passing through the steam boilers to quicken the generation of steam.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 25.—Nº 266.

ROBINSON, Thomas.—(*Provisional protection only.*)—"Improvements in the formation or construction "of fortifications."

According to this invention fortifications are formed or constructed of large heavy masses of iron or steel cast in position where required. The iron or steel cast as aforesaid may constitute the entire fortification, or it may be made to face or shield masonry, brick, or other work in whole or in part, but particularly at and near to the gun openings or embrasures.

The iron or steel is melted on the spot in cupolas or furnaces, and allowed to flow directly or indirectly into the moulds, these latter being first dried.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—Nº 267.

WELLS, Rufus Gibbon, and JONES, David.—(*Provisional protection only.*)—"Improvements in "apparatus for producing optical illusions."

This invention refers to certain improvements in the "zoetrope" or wheel of life, and they consist chiefly in suspending the drum or cylinder which contains the pictures, applying to the means of suspension automatic rotatory apparatus to give motion to the cylinder or drum, which is arranged to admit two or more rows of pictures. The invention also refers to the putting together of the parts of the cylinder or drum.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—Nº 268.

PARNACOTT, Edward Joseph William.—"Improvements in the manufacture of elastic rollers."

The rollers are made of an elastic compound that will resist the softening action of hot water, or of sections of soft wood cemented by elastic cement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—Nº 269.

PRINCE, Alexander Charles Montague.—(*A communication from Sterling Bonsall and Louis Hillebrand.*)—(*Provisional protection only.*)—"A new or improved bell-pull for door bells."

The novelty of this invention consists in actuating the bell-pull by a downward oblique or curved downward motion; in the construction of a hinge by the forked end of the handle resting over a pintel placed across a slot, or over the edge of the same; in the tongue formed in two parts, so hinged as to allow the handle to move downward while the link moves horizontally and connects the bell wire with the handle; in the tongue in one piece attached to the handle for the same purpose; and in the plate, the handle, the hinge and tongue combined to form a bell-pull.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 25.—Nº 270.

McDOUGALL, Arthur.—"Improvements in apparatus for burning, calcining, or roasting sulphur ores "and other materials."

This invention relates to an improved construction of apparatus for the purpose of effecting the burning, calcining, or roasting ores and other materials, but which is more especially adapted for burning ores or other materials containing sulphur.

The apparatus employed for this purpose is by preference constructed of a circular form, and consists essentially of a circular horizontal floor of brick, tiles, fireclay, or metal covered with a dome, or spherical, or arched roof also constructed of similar materials. The floor of this combustion chamber may be heated from below by means of flues to any temperature desired.

In and through the centre of the roof a feeding hopper of convenient form and dimensions is placed.

Through the centre of the hopper a vertical shaft, driven by any convenient motive power, is fixed, and carries at its lower extremity cross bars extending nearly the whole of the diameter of the floor. To these cross bars a number of plates placed vertically or otherwise are attached so as to form a rake or agitator, and are so fixed that when the shaft revolves the cross bars are carried with it, and the materials being operated upon are made to pass from the centre to the circumference, where they are allowed to pass out of the calciner by means of tubes or outlets. Upon that portion of the vertical shaft which passes through the neck of the hopper short projecting arms or a spiral worm is placed so as to act as feeders to the calciner. The bearings of the vertical shaft may be upon an adjustable bar so as bring the rake or agitator to any desired distance from the floor. In the lower portion, and if necessary in other portions of the apparatus, suitable arrangements may be made for the admission of atmospheric air and the gaseous products to pass off.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 25.—N° 271.

JOHNSON, JOHN HENRY.—(*A communication from Adolphe Perrot.*)—"Improvements in apparatus for "melting and heating metals and other substances."

This invention relates to certain peculiar apparatus for effecting the melting and heating of metals and other substances by the aid of combustible gas or gases mixed with a suitable proportion of atmospheric air or of oxygean. The improved apparatus consists essentially of two parts, namely, the heating or melting chamber and the burners or appliances for introducing and consuming the gas. According to one form of apparatus intended for effecting the fusion of metals or other substances in crucibles, the gas, which may be the ordinary gas employed for illumination and used at the ordinary pressure, is introduced by a pipe and regulatory cock provided with an indicating plate and pointer, into an annular chamber provided on the upper surface with any convenient number of jet nozzles; each nozzle enters the lower end of an upright pipe, the upper end of which pipe is curved inwards and enters a ring situate some distance above the annular chamber hereinbefore referred to. On the interior of this ring there are fixed by the aid of pins a number of mouth pieces curving upwards, into which the ends of the several pipes open. The requisite supply of air is admitted into the lower ends of the several pipes by a perforated collar fitted on to each pipe, a corresponding lateral opening being made in the pipe itself, so that by turning these collars the air may be either shut off entirely or its admission regulated according to requirements. The turning of the several collars is effected simultaneously by the aid of one common ring turning on a projecting rim on the upper surface of the annular chamber, such ring carrying a number of projecting arms, which actuate the several collars above referred to; the upper ring, into which the several tubes open, rests upon three or more supports, and carries in the centre thereof a vertically adjustable support of fire clay, upon which the crucible containing the metal or substance to be fused rests. Beneath this there is situate a receptacle for collecting the molten metal in case of fraction of the crucible, and hence there is no risk of wasting the metal. The crucible is inclosed in a fire clay muffle open at the top and bottom, and the gas flame enters this muffle through the lower opening and surrounds the crucible. The upper and lower ends of the muffle are curved or rounded inwards so as to produce a reverberatory action. The muffle is surrounded by an outer fire clay cylinder, which communicates with the chimney provided with a regulating valve and indicator, and the whole is enclosed in sheet metal. A fire clay cover rests upon the outer fire clay cylinder, and a central stoppered opening is made in this cover for the facility of introducing fresh pieces of metal or other substances. No blast is required with this apparatus, a chimney of from seven to ten feet in height being capable of producing sufficient draught for all ordinary purposes, and as the apparatus is perfectly portable it may be conveniently used in any situation.

In many cases it is requisite to protect from the direct action of the flame articles which are intended to be subjected to an elevated temperature; for this purpose it is proposed to employ the heating muffle hereinbefore described, which will be found to be specially adapted for enamellers, although the same principle may be applied to other muffles or be employed for the heating of ovens for baking and other purposes. The muffle itself may be of any form, according to the uses to which it is to be applied; its top, bottom, and sides are surrounded by a fire clay envelope of the form corresponding to that of the muffle, but leaving a space all round between the muffle and the envelope for the passage of the gas flame. The envelope referred to is enclosed in brick setting, a space being left between the setting and the envelope for the passage of the flame to the chimney, a number of small flues being made to communicate between the chimney and the space last referred to for that purpose. One end of the envelope projects slightly beyond the front of the setting, and is curved or contracted at that end, a contracted opening of the shape or contour of the muffle being also provided at that part, through which the several gas flames from tubes or burners similar to those hereinbefore referred to, but situate horizontally, enter into the envelope. These flames circulate round the exterior of the muffle, then pass along the exterior of the envelope, and finally enter the chimney through the several small flues or passages above referred to; the draught is regulated by an adjustable valve or damper in the chimney. In the centre of the series of gas pipes there is situate an adjustable and slightly tapered block of fire clay of a cross section corresponding in shape to that of the opening in the envelope, and by moving this block in or out of the said opening the amount of air allowed to enter with the flame is regulated accordingly.

[Printed, 1s. 4d. Drawings.]

A.D. 1868, January 25.—N° 272.

WIRTH, FRANCIS.—(*A communication from Peter Corfitz Möller and Ferdinand Walter.*)—"An improved "apparatus for heating, evaporating, and decomposing water, oil, and other substances."

The said apparatus consists of one or more peculiarly constructed metallic walls, whose middle web or body is wedge shaped in cross section. The sides of the said walls are channeled, and the divisions between the channels are taper or wedge shaped. The middle web or body is provided with horizontal canals, which are nearer together towards the fire-box than at the smoke box. Vertical canals are also formed, which are smallest at the fire box end. The metallic walls may be put in communication by means of cocks. The substances to be heated are introduced into the horizontal canals, and the heat enters from the outside of the walls, which are heated uniformly by the flames from the fireplace.

[Printed, 8d. Drawing.]

A.D. 1868, January 27.—N° 273.

ROWLEY, JOHN. — (*Provisional protection refused.*) — "An improved process for the ornamenting of "candles."

My improvement consist in taking the candles and dipping them in a solution of a metallic substance by which they become coated and have then the appearance of the metallic body or substance in which they have been so placed.

[Printed, 4d. No Drawings.]

A.D. 1868, January 27.—N° 274.

MIDDLEMIST, ALFRED.—"An improved apparatus for increasing, regulating, and controlling the heat "and draught in stoves and other fireplaces."

This invention consists of a metallic case or box forming a connecting passage between the mouth of the chimney and the stove or grate, in which a damper is employed for increasing and regulating the draught and heat of the fire within the stove apartment or otherwise.

[Printed, 8d. Drawing.]

A.D. 1868, January 27.—N° 275.

THURGAR, AUGUSTUS HENRY.—(*Provisional protection only.*)—"Improvements in securing the corks of "bottles containing Champagne and other effervescing liquids."

This invention consists in an improved arrangement or contrivance for fastening in the corks of Champagne bottles and of bottles in general containing effervescent liquids, whereby a better fastening is obtained and greater facility for opening the bottles is afforded.

This arrangement or contrivance consists of one or more pieces of annealed wire so formed or twisted as to encircle the neck of the bottle and to pass four or more times over the top of the cork over which the wire is twisted by means of small leaden seals with which it is provided; the said seals also serving for untwisting the wire when the cork is to be drawn.

[Printed, 4d. No Drawings.]

A.D. 1868, January 27.—N° 276.

HICKS, JAMES JOSEPH.—"Improvements in the manufacture of backs and handles for hand mirrors."

The invention consists in the employment for the above purposes of china or earthenware moulded to the shape required, and provided with a recess into which the mirror is fixed by cement or otherwise. Such recess is formed by preference deeper in the middle than at the edges, and if desired the sides of the recess may be undercut.

The china or earthenware may be of any desired colour and ornamented to suit the taste of the purchaser.

In some cases a veneer of china or earthenware is applied on to a suitable foundation.

[Printed, 6d. Drawing.]

A.D. 1868, January 27.—N° 277.

DICKINSON, THOMAS.—(*Provisional protection only.*)—"Improvements in apparatus for drawing off "water."

This invention is intended principally to be applied to taps for drawing off water, where owing to the height of the cistern or reservoir above the tap (or to other similar causes) there is a considerable pressure of water.

The invention consists in attaching to the rear end of the tap (at the point of its connection with the feed pipe) a hollow vessel of a globular or other suitable form, into which the lower end of the feed pipe projects, dipping nearly to the bottom thereof. The upper part of this vessel above the level of the discharge opening will always contain air, which will act as an elastic cushion or buffer, and prevent or greatly diminish the concussion which would otherwise occur on the sudden shutting of the tap and consequent sudden stoppage of the descending current of water.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 27.—N° 278.

KELLOGG, GEORGE.—(*A communication from Henry Kellogg.*)—" Improvements in hats, bonnets, and " other coverings for the head, and in machinery for manufacturing the same."

The novelty consists in,—

The peculiar formation of hats, bonnets, and other coverings for the head, and the apparatus by means of which these articles are manufactured.

The body of the article is composed of animal and vegetable fibre, which is placed in the form of pulp in a pervious former of the shape of the hat, bonnet, or other article required to be produced.

This pervious former is raised and lowered by means of a piston and forced against a couching pad until the pulp is consolidated and pressed into the form of the hat, bonnet, or other article required to be produced.

The article thus formed is then placed in a clay mould to dry. This mould may be embossed with a straw pattern or any other device, the said pattern or device being imparted to the outside of the hat or other article by pressing the same into the mould.

[Printed, 2*s.* 6*d.* Drawings.]

A.D. 1868, January 27.—N° 279.

RENDLE, WILLIAM EDGCUMBE.—" Improvements in structures for protecting fruit trees, vegetables, " and other plants from frost, cold winds, or rain, also in heating such and other structures."

This Provisional Specification describes various modes of making cheap and portable structures for protecting vines and other fruit trees. Some of the protectors are made with two parallel sides of wood, earthenware, or other material covered over at top with sloping sheets of glass; other protectors are made of tubes of glass laid end to end upon the ground, and vines are trained along the interior of such tubes, suitable opening in the tubes being provided, or curved tiles or parts of tubes are used placed end to end along the ground and covered with glass, or the tubes or tiles might be supported in a vertical position. Long flues, hot air pipes, or hot water pipes or tanks covered over with sand, gravel, or other material are employed for giving heat below the rows of plants or trees.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, January 27.—N° 280.

NEWTON, WILLIAM EDWARD.—(*A communication from William Cleveland Hicks.*)—" Improved machinery " for grinding and polishing concave surfaces."

Grinding discs or tools are mounted on a shaft which is placed inside the cylinder to be operated on, and is actuated by suitable driving gear adapted to either or both ends of the shaft.

[Printed, 6*d.* Drawing.]

A.D. 1868, January 27.—N° 281.

NEWTON, WILLIAM EDWARD. — (*A communication from John Hill Prentice.*) — " Improvements in " machinery for forming hat bodies, skirts, and other articles of wool and other fibrous materials."

The invention consists in placing the wheel by which the oscillating motion of the former is produced in a plane parallel with the axis of the pin of the oscillating frame which carries the former.

Adapting a sun and planet motion to the driving wheel and oscillating frame.

Adapting an adjustable wrist pin to the sun and planet wheels and driving wheel.

[Printed, 6*d.* Drawing.]

A.D. 1868, January 27.—N° 282.

ELLIS, WILLIAM.—" Improvements in or applicable to circular or rotating machines for cutting wood by " hand or steam power for making laths, cards, strips, or slices of wood and other articles."

The novelty of the invention consists in making laths used in building purposes by machinery instead of by hand labor as now performed.

The additions and improvements consist of,—

One roller made of iron or metal with a number of sections and recesses or grooves for fixing knives for cutting and dividing timber into various thicknesses and widths, and such knives to be secured by hoops and clips, and the said roller to be attached and connected to a rotary or circular machine for cutting wood of various guages and thicknesses.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 27.—N° 283.

CLERK, Francis North.—" Improvements in machinery for the manufacture of washers and other " similar articles."

According to this invention a moveable hollow cutting tool descends and cuts out the washer from sheet metal, strip, bar, or hoop metal against the edge of a fixed cutting tool. A piercing punch rises through the fixed cutting tool, cuts out the hole in the washer against the moveable cutting tool. The wad cut out is forced up the hollow cutting tool and is ejected thereform near its top. The piercing punch descending the washer is arrested by takers off or releasers, and on the withdrawal of the said punch the washer falls from the machine. Other articles having the same general figure as washers may be cut out and pierced by the machine.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 27.—N° 284.

ROBERTS, John, and MORGAN, Jabez.—" Improvements in joining metallic pipes."

According to this invention on the outside of each end of the two pipes to be joined is a series of inclined projections with which two series of similar projections in the interior of a detached collar or ring placed on the ends of the pipes are made to engage when the collar is turned a portion of a circle. By the turning of the collar its projections are made to engage on each side the inclined projections on the pipes and to draw the ends of the pipes together by a wedging action. The ends of the pipes are thereby securely held together, a tight joint being formed by a washer placed between the flat ends of the pipes.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 28.—N° 285.

TRANTER, William.—" Improvements in fire-arms and cartridges."

The first part of this invention is the hollowing out of the striking part of the hammer and the adjustment of the lock of the pistol so that the hammer when at half cock may form a safety cover for the striking pin for a central fire cartridge.

The second part is the application of a tubular guide for the extracting rod, such guide having a tail piece pivoted to the pistol frame so as to admit of the rod lying along underneath the barrel when out of use, and of being pushed through the guide into the chamber to force out a cartridge case when the guide has been turned on its pivot into the required position.

The third part is the formation of a hole or a nick in the shield at the back of the revolving chamber, and the application of a bolt working through the same in order to fix the chamber in any required position.

The fourth part is the formation of a hollow on the inner side of the lifter of the revolving chamber for carrying the spring so that the lifter and catch may act together.

The fifth part is the formation of the socket of the anvil of central fire cartridges in one piece of metal, and bent into a form resembling the letter M in cross section.

And the last part is the general combination of the parts above referred to.

[Printed, 6*d.* Drawing.]

A.D. 1868, January 28.—N° 286.

EGERSDORFF, Edwin.—(*Provisional protection only.*)—" Improvements in tips for boot heels."

A rim of metal or leather with radiating bars united to a counter sunk centre all of the same material. The interstices or spaces between the bars are filled up with transversely cut pieces of wood, by which combination of material and the revolving of the tip on a centre or screw I obtain great economy and durability.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 28.—N° 287.

BONNEVILLE, Henri Adrien.—(*A communication from Charles Hermann Römcke and Arthur Yvernault.*) —(*Provisional protection only.*)—" A new mode of preserving eggs and improved apparatus connected " therewith."

This invention relates to the preservation of eggs by the combined use of salt and charcoal in cases or other convenient recipients, preferably made of pine or deal wood.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 28.—N° 288.

BONNEVILLE, Henri Adrien.—(*A communication from Francisque David.*)—" Improvements in ribbon " looms."

This invention relates to an improvement in the battens of looms capable of weaving several double pieces of velvet at the same time, and consists in adding to the two ordinary straight shuttles two circular shuttles, by means of which figuring or embossment is obtained.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 28.—N° 289.

GIBBS, William Alfred.—" Improvements in mechanism or apparatus for drying wheat in the sheaf " and other vegetable matters."

Firstly. Sheaves are dried by this apparatus by placing them upon tubes projecting into a covered chamber so that hot or dried air is forced through the heads of the sheaves.

Secondly. Vegetable products are placed in cylindrical segments made of porous material revolving in a chamber, and hot or dried air is forced into the chamber. A revolving brush is used to prevent clogging.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 28.—N° 290.

CRISPIN, William Henry.—" Improved anti-scorbutic biscuits."

The biscuits are formed by the combination of potatoes or other vegetable subtances (either alone or in combination with the potato) which contain potash, with ordinary flour, by preference that of wheat. The potatoes or other vegetable substances are reduced whilst raw or uncooked to a state of fine division, and intimately mixed with flour, formed into biscuits, and baked. The moisture contained in the vegetables themselves will usually be sufficient to secure the necessary combination with the flour, but a small quantity of water or milk may if requisite be added.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 28.—N° 291.

BROOMAN, Clinton Edgcumbe.—(*A communication from Louis Miroude-Pichard.*)—" Improvements in " the manufacture of candles."

Candles to go out automatically before burning to the end. A piece of incombustible material forms the end of the candle, or the wick is shortened so as not to reach the end, or the wick is previously impregnated with an incombustible chemical substance at the part where it is desired the candle should go out.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 28.—N° 292.

SANDERS, George Nicholas. —(*Provisional protection only.*) — " Improved apparatus for regulating " and increasing artificial light produced by the combustion of gas, oil, petroleum, and other volatile oils."

A threaded rod in the centre of the chimney carries discs which reflect, expand, and steady the light. A cone with spring tongues is fitted to the top of the chimney, the tongues opening under the action of the heat to allow the burnt gases to escape.

Instead of the cone with tongues a disc cut into the form of elastic plates is fitted on the threaded rod, the plates being free or held like an umbrella.

When the cone is not used the chimney is enlarged at its lower and upper parts, the top being closed; the enlarged upper part has lateral openings for the escape of the burnt gases. In another modification the threaded rod extends to near the burner, and carries a sphere which enters the flame. Two recesses in the lower part of the chimney are described, the upper to support the chimney on the burner or lamp, and the lower to support a perforated bottom, which is made in two parts so as to be inserted into the lower end of the chimney. In another arrangement, specially for gas burners, the gas pipe is carried down through the threaded rod and ends in ring burner; an inverted cone at the lower end of the rod establishes an air current in the middle of the flame. In this arrangement the top of the chimeny is made in a separate piece.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 28.—Nº 293.

HYDES, THOMAS, and BENNETT, JOSEPH.—(*Provisional protection only.*)—" Improved means or " appliances for facilitating the transit and application of caloric; also for mixing caloric with air, water, and " other fluids and gases; also for economizing the consumption of fuel, consuming smoke, generating steam, " and increasing and distributing heat, and for refrigerating purposes."

This invention consists, first, in the application of guides or channels to direct hot gases or fluids to the surface of their containers, such as flues, tubes, or other channels, for the purpose of more fully developing and absorbing the caloric from the gases or fluids and using the same for any specified purpose, which caloric would otherwise be lost by passing away through the body or central part of the flues or tubes. Secondly, in applying on each or only on one side of a partition situated between hot and cold guides or channels through which air, fluids, or gases are guided in parallel lines or nearly so, or in cross lines, and in constantly circulating streams which pass instantaneously within the most effective distance over and entirely cover the whole surface of the said partition intended to be acted upon for the purpose of transferring their heat or caloric from one fluid to any other fluid. Thirdly, in passing hot liquids through flues or tubes, and by directing cold air or water against the outer or cold side of the aforesaid partition to cool the said liquids, and thereby operate as a refrigerator.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 28.—Nº 294.

PICKERING, ARTHUR.—" Improvements in machinery for cutting out, stamping, and embossing lozenges, " jujubes, and various articles of fancy confectionery, and other articles from soft or plastic substances or " materials."

This invention consists principally of a horizontal pressing plate worked by a ram and screw, and a horizontal frame of cutters, embossing plate, or tools hinged to a table. The sheet of material from which the articles are to be cut, stamped, or embossed is placed upon the table, and the frame of cutters is folded down upon it, and the table, sheet of material, and frame of cutters are advanced underneath the pressing plate and between it and the bed of the machine. The pressing plate being brought down upon the frame of cutters a large quantity of articles are simultaneously cut, stamped, or embossed from the sheet of material on the table. On the removal of the frame of cutters and table from under the pressing plate the frame of cutters is raised on its hinge and the cut out articles deposited in a receiver, and the unused material or refuse removed from the table.

When the machine is used for making ring like articles a lateral frame of cutters, in addition to the end frame of cutters, is employed. One series of cutters being used for cutting out the disks, and the other series being used for perforating the disks.

[Printed, 10*d.* Drawing.]

A.D. 1868, January 28.—Nº 295.

CORBETT, THOMAS.—" Improvements in machinery for cleaning and separating grain and for other like " purposes."

According to this invention the clogging of the screens of the said machines is prevented by a brush or roller carried and pressed by an endless band against the under side of the screen, or by an oscillating frame carrying rollers. By these means any grains fixed in the meshes of the screen are removed. The lower end of the screen and the apparatus described are raised and lowered simultaneously by means of a screw. Motion is given to the screen by means of a crank connected to its upper end instead of to its lower end as usual.

[Printed, 1*s.* Drawing.]

A.D. 1868, January 28.—Nº 296.

LAKE, WILLIAM ROBERT.—(*A communication from Clarendon Williams and Thomas Stephens.*)—" An " improved pavement."

The said invention relates to the novel construction of pavement for streets and other thoroughfares the materials for which comprise wood, asphaltum, and sand, and the said invention consists in a peculiar mode of combining the several parts together. A foundation of asphaltum is surmounted by a layer or bed of sand, whereon are laid blocks of wood having dovetail grooves on the top and sides for the reception of asphaltum or other suitable cement, which is poured while in a fluid state into the said grooves. The blocks of wood are thus locked or secured together, the whole forming a substantial noiseless roadway impervious to the elements and easily repaired.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 28.—N° 297.

PEARSON, John, and **YOUNG**, James William.—(*Provisional protection only.*)—"Improvements "in refining or purifying oils and in the apparatus employed therein."

The oil to be purified is passed through a hot water bath, where it deposits the earthy matter which it may contain, and it is then admitted to an animal charcoal filter.

When the oil is intended for lubricating delicate machinery it is subjected to the chemical action of lead cuttings. The oil is next run through a vessel containing a mixture of bone black, chalk, and silver sand, and fitted with a stirrer which will cause the intimate admixture of the oil with the filtering materials. As the oil percolates from this vessel it is filtered through filtering paper.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 28.—N° 298.

BROWN, John.—"Improvements in machinery for cutting or slicing wood, tobacco, or other fibrous "substances."

This Provisional Specification describes certain improvements in machinery used for the purpose of cutting or slicing wood, tobacco, or other fibrous substances, and consists in certain modifications of machinery employed for this purpose and described in the Specification of a Patent granted to the inventor, bearing date the 19th day of May 1866, N° 1418.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 28.—N° 299.

MOSER, Robert James.—(*A communication from John Bowden and Walter Bowden.*)—"Improvements in "bellows applicable especially to portable and other forges."

According to this Provisional Specification an air reservoir is employed consisting of an air tight case, the top of which rises or falls according as air is forced into the air reservoir or escapes from it to the fire, on the top and bottom of the air reservoir are feeders forcing air into it.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 28.—N° 300.

PILLINER, Alfred Colerick, and **HILL**, James Charles.—"Improvements in machinery for "obtaining motive power applicable also to measuring, raising, exhausting, forcing, and compressing "fluids."

The apparatus described in this Provisional Specification consists of a casing in the form of two parallel cylinders placed side to side opening the one into the other and enclosed by covers at their ends. There is a partition in the two cylinders rocking upon a fulcrum at the point of contact of the two cylinders. The partition divides the casing into two parts, in one of which is the inlet and in the other the exit passage. The partition either drives or receives its motion from a crank.

The partition consists of two cylindrical or nearly cylindrical heads, one at either end of a central stem.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, January 28.—N° 301.

JOHNSON, John Henry.—(*A communication from Pierre Alauzet.*)—"Improvements in lithographic "printing machines."

This invention relates to mechanical lithographic printing machines, and consists,—

Firstly. In the application of a small disc carried by an arm mounted on a spindle, and bearing against the circumference of the main pressing cylinder of the machine for the purpose of removing the sheets without the necessity of using tapes, and without the risk of soiling the sheets; this arrangement is moreover specially applicable to very narrow margins.

Secondly. In the employment of a feed roller covered with felt, flannel, or other absorbent material carried on the back portion of the carriage which supports the stone, such roller having for its object the supplying of moisture to the damping rollers.

Thirdly. In the use in substitution for the above mentioned roller of a water reservoir, which serves to damp the stone through the intervention of a special roller in conjunction with the damping rollers.

Fourthly. In the use of a moveable plate situate on the surface of the carriage, and made to rise horizontally by the aid of lever arms on rocking shafts carried on the under side of the carriage, and actuated by a screw spindle, for the purpose of adjusting the height of the stone. This arrangement moreover admits of the stone being placed from the back of the carriage, and without inclining it as heretofore.

Fifthly. In the employment of a system of moveable register actuated by a lever inside the main cylinder worked by an eccentric or cam, whereby facility is afforded for puncturing the sheet after it has been laid hold of by the gripper, thus ensuring greater precision in the register.

Sixthly. In the use of a lever arm on the main cylinder for detaching the sheet from the register points or perforators above referred to, and preventing accidental injury or tearing of the sheet; this lever arm over which the sheet is placed is actuated by the same mechanism which operates the gripper, and is elevated just before the arrest of the motion of the cylinder, in order to disengage the sheet from the points, and then returns to its normal position again.

Seventhly. In the employment of a moveable bar or roller carried on small lever arms for the purpose of pressing down the corners of the sheet and retaining it in its proper position on the cylinder until the gripper has seized it, thereby ensuring greater accuracy of register.

Eighthly. In obtaining the required elastic or yielding pressure of the cylinder by the aid of springs composed of discs of caoutchouc, felt, or other elastic material in lieu of counterweights as heretofore.

Ninthly. In the employment of a species of hammer having perforations therein corresponding to the points hereinbefore referred to; this hammer is actuated by a volute or barrel spring fast to a horizontal spindle which carries a pinion in gear with the rack of the machine. The object of this arrangement is to effect the automatic perforation of the register holes in the back of the sheet, whereby greater regularity is obtained than when such operation is effected by manual labour as heretofore.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, January 28.—N° 302.

BRUNTON, John Dickinson. — "Improvements in machinery or apparatus for cutting, dressing, "planing, turning, and shaping stone."

This invention relates to a peculiar construction and arrangement of the frame and working or moving parts of machinery or apparatus to be employed in cutting, dressing, planing, turning, and shaping stone whereby a more advantageous and effectual application of circular or discoidal cutters to the purposes referred to is effected. Another part of this invention relates to a new form of cutter, which I propose to call a "sector," and to the construction and arrangement of the frame and working or moving parts of machinery or apparatus for the use or application of the said improved form of cutter.

The main objects to be attained by the use of the improvements hereinbefore referred to are,—

1st. To secure rigidly in the moving arm or arms carrying the cutters discs.

2nd. To cause the discs during a part of their motion to pass over the surface of the stone, which is still undressed without touching the same.

3rd. To hold the "sectors" and to give them the required motion.

4th. To provide for varying the angle of the discs and "sectors" to suit different descriptions of stone and different characters of work.

5th. To give to the moving arm or arms carrying the discs or "sectors" such a motion, and to the discs or "sectors" themselves such a position relatively to each other, as either alone or in combination with a motion of the stone itself shall cause the discs or "sectors" to shape the stone to any required form.

[Printed, 2*s.* Drawings.]

A.D. 1868, January 28.—N° 303.

RICHARDSON, William Haden, and BEARDMORE, William.—"An improved process to be used "in the manufacture of iron and steel, and improvements in the apparatus or means to be employed "therefor."

The feature of novelty which constitutes this invention is the introduction of air, gases, or steam in succession or at intervals into the molten metal in the puddling furnace, the steam being introduced to cool down the furnace when the blast of air has brought it to too high a temperature.

[Printed, 8*d.* Drawing.]

A.D. 1868, January 28.—N° 304.

MARCH, William, junior.—(*Provisional protection only.*)—"Improvements in lasts for boots and shoes."

I form metal lasts in two parts cast hollow. The upper or instep portion is first cast from a hollow pattern having dovetailed recesses at either end, this is then filled with sand, and the hollow pattern of the sole piece, also filled with sand, applied thereon, the whole being placed in an inverted position in a mould. The pattern is now removed, leaving the sand in the form of the sole piece, and the metal poured in to form the casting of same.

The metal fills the dovetailed recesses and forms projections serving to connect the two parts of the last. I further secure the parts of the last together on the upper end of a standard passing through holes cast in said last, while I fix the last on the standard by means of a disc having recesses around it into which takes a projection on the instep piece so as to hold it at any angle desired.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 29.—N° 305.

McCURD, Claverhouse Alfred.—(*Provisional protection only.*)—"Improvements in sewing machines."

The combination and general arrangement of the parts.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 29.—N° 306.

WILSON, Robert.—(*Provisional protection only.*)—"Improvements in the method of or means for " forming connections or joints to pipes and other articles for conveying fluids and liquids."

The features of novelty in this invention consist in the use and application to connections, unions, or joints for conveying fluids and liquids through pipes of an annular groove filled with vulcanised india rubber to form a female socket, into which the tapered nose of a male socket may be introduced, and thus form a perfect joint.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 29.—N° 307.

SNELL, William.—(*A communication from Ebenezer D. Draper, Russell A. Balton, Edward W. Glover, Edwin Austen Eaton, and William Carlton Ireland.*)—"Improvements in steam fire-proof safes."

The invention consists in filling in safe walls with wood in order to increase their non-conducting power; in the employment of steam tight packing on the door frame and door of a safe, or of any compartment of a safe; the closing of the door tightly by means of a swinging rod or bolt with eccentric ends and hooks on the jambs; a combination of tubes within the water vessels by means of which the water is prevented from being spilt and the steam allowed to escape when the safe becomes heated; the use of a peculiar cap soldered down by means of an alloy of fusible metal which covers the outer orifices of these tubes, but is forced off by the steam as soon as the latter forms within the water vessel; and, lastly, the introduction of a stratum of mica with or without a stratum of fusible metal in the door jambs and walls of a safe to obstruct the passage of heat.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 29.—N° 308.

SNELL, William.—(*A communication from Rufus Slocum Sanborn.*)—"An improved fire-proof powder " magazine."

This invention consists in surrounding the magazine with water enclosed and arranged in such a manner that in case of great heat around the magazine the packages of powder or other combustible material shall be entirely enveloped in steam. The details are described but not claimed here, as the inventor believing them to be covered by his former Patent for improvements in fire proof safes.

[Printed, 6*d*. Drawing.]

A.D. 1868, January 29.—N° 309.

ARDREY, Samuel Bradley, and BECKETT, Samuel.—(*Provisional protection only.*)—"Improvements " in velocipedes."

The novelty consists,—

First. In the application of a ring or plate of metal on one or both sides of the wheels, to which ring or plate is attached the crank pin.

Second. In applying springs so as to give vertical elasticity to the carriage.

Third. In the application of a hollow bush or tube to the swivel wheel.

Fourth. In making the stirrups for the feet of metal with a boss or projection through which the bolt of the swivel wheel is passed.

Fifth. In placing the spindles which connect the upper rail to the seat of the carriage at an angle therewith.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 29.—N° 310.

TASKER, William.—(*A communication from Samuel Fay.*)—"An improved machine for opening and "cleaning cotton applicable also for other purposes."

The novelty consists in,—

The combination of two beaters arranged the one within the other and revolved with the same or different velocities in the same or opposite directions.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 29.—N° 311.

LAW, David, and WHARRIE, John.—"Improvements in the manufacture of cast iron pipes and "similar articles, and in apparatus therefor."

This invention relates to the manufacture of cast-iron pipes and similar articles, and it comprises arrangements admitting of dry sand being used as the coating material for the cores instead of the comparatively expensive loam and haybands generally employed. It also comprises the forming of the cores and external moulds simultaneously.

The invention consists, in the first place, in using a short length of corebox or matrix within which the sand is rammed upon the surface of a collapsible or other core bar by means of a ring of rammers, the short matrix and the rammers rising as the formation of the coating progresses along the surface of the core bar which is in a vertical position. The invention consists, secondly, in using a short moving pattern, the outside of which shapes the external mould, whilst the inside shapes the core in combination with two sets of rammers one outside and the other inside thereof.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 29.—N° 312.

THORNTON, George.—(*Provisional protection only.*)—"Improvements in straw elevators to take straw "from thrashing machines."

The invention consists principally in attaching the straw elevator to the delivery end of the thrashing machine by means of a circular plate and stud instead of mounting it upon a separate carriage as hitherto practised.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 29.—N° 313.

GUISE, William.—(*Letters Patent void for want of Final Specification.*)—"Improvements in scouring "needles and other articles made of iron and steel wire, and in apparatus used for that purpose."

According to this invention the scouring process is so conducted that the needles or articles are kept constantly wet during the said process. This is effected by making the runner bench into a shallow trough, and placing a layer of water or weak solution of washing soda therein. The heating of the needles or articles during the scouring process is thereby prevented, and their temper is not affected. The runner which is placed upon and works backwards and forwards on the packets of needles or articles may be weighted and the scouring thereby expedited.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 29.—N° 314.

RILEY, Charles.—"An improved combined threshing machine frame."

The novelty consists in the form of the frame and joint, and in the substitution of iron or other metal rolled to an angular, trough-like, or other similar form, in lieu of wood and mortice joints, for combining great strength with lightness and economising space.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 29.—N° 315.

MARTIN, Samuel Manley, and VARLEY, Samuel Alfred.—"Improvements in electrical train "intercommunication, parts of which invention are applicable to electro-magnetic and other electrical "apparatus."

This invention relates to improvements on two former inventions for which Letters Patent were granted, bearing date April 5th, 1866, N° 966, and for which Letters Patent were granted, bearing date July 30th, 1867, N° 2207; and the invention consists, firstly, of improvements in the construction of the electrical coupling ropes connecting vehicle and vehicle.

Secondly. In an arrangement for indicating to the engine driver and guards whenever a train or a vehicle breaks away.

Thirdly. In the construction of electrical alarums, and in parts of the apparatus connected therewith.

Fourthly. In the construction of apparatus to be placed in the carriages to enable the passengers to communicate with the guards and engine-driver.

Fifthly. In the construction of cells for galvanic batteries for the same.

Sixthly. In the construction of galvanic batteries and tools by means of which they may be more easily renewed, and,

Seventhly. In a method of generating electricity by mechanical force.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, January 29.—N° 316.

NEWTON, WILLIAM EDWARD.—(*A communication from Auguste Bernier Didier, Edouard Nelaton, and David Julien Montandon.*) — (*Provisional protection only.*) — "Improvements in self-acting brakes for "carriages."

By allowing the pole of a carriage 2 or 3 inches play, the horses when they pull up will force the pole backwards and cause it to act on a traverse rod to which the brakes are attached, and will thus force them against the peripheries of the wheels.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 29.—N° 317.

NEWTON, WILLIAM EDWARD.—(*A communication from Hiram Berdan.*)—"Improvements in breech-"loading fire-arms and in cartridges and bullets for the same."

This breech-loader is constructed on the Mont-Storm principle, and the breech-piece has a locking bolt which also acts as a hammer to drive forward the firing-pin. The cartridge is made with a projecting boss on its head, and the case is strengthened by the use of an inner cup, and also by running solder round the inside of the rim. The bullet is made with a number of circumferential grooves to receive grease.

[Printed, 1*s.* 4*d.* Drawing.]

A.D. 1868, January 29.—N° 318.

JOHNSON, JOHN HENRY.—(*A communication from Charles Meunier.*)—"Improvements in disintegrating, "scouring, and cleansing raw wool and woollen fabrics."

This invention has for its object the removal of heterogeneous substances from raw wool and to disintegrate or separate cotton from woollen stuffs by employing in both cases cleansing and scouring substances, such as ammonia, sulphuric, nitric, muriatic, citric, or oxalic acids, chlorate of potash, nitrate of potash, nitrate of lime, carbonate of potash, tartric acid, and bi-sulphuret of soda.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 29.—N° 319.

LAKE, WILLIAM ROBERT.—(*A communication from Riley Porter Wilson.*)—(*Provisional protection only.*) —"Improvements in furnaces or ovens for roasting ores."

My invention relates to furnaces for desulphurizing ores for manufacturing sulphuric acid and for other like purposes, and consists partly in constructing and arranging the parts of a circular furnace or oven in such a manner that the flames and currents of air instead of passing into the oven pass above and below the same. The said invention also consists in the employment in combination with such a furnace or oven of a revolving shaft and arms which carry distributors or conveyors formed of fire clay or other like substance. The said shaft and arms may be made hollow and perforated to admit air or oxygen into the furnace. The said invention also consists partly in the employment of fire clay, plumbago, or other suitable fire resisting material as a covering for the shaft arms and other parts of the apparatus. The said invention also consists in constructing below the floor of the oven a number of circular flues which are connected with other flues above the top of the oven communicating with a chimney or drying floor. The said invention also consists partly in providing the furnace with an outlet for conducting away volatile substances, and also in an arrangement of pipes communicating with a condenser, whereby a jet of steam or air may be applied to force the gasses through water when precious metals are being treated, thus preventing any loss of the same.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 30.—N° 320.

DOBSON, Benjamin, SLATER, William, and HALLIWELL, Robert — “Improvements in “ machines for spinning and doubling.”

Our invention consists, first, in certain improved modes of driving the spindles of mules so that the single speed can be altered independently of the double speed, and vice versa.

Secondly. In supporting the long lever on an adjustable fulcrum stud fitting in slots in the lever, and in the bracket, and,

Thirdly. In regulating the application of the break on the pulley for giving the inward run of the carriage by moving the strap fork rod partly round, thereby acting on a weight connected to the break.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 30.—N° 321.

RADCLIFFE, James.—“ Improvements in the manufacture of puddled iron and steel into finished bars, “ plates, or other forms.”

This Provisional Specification describes improvements in the process of producing bars, plates, rails, or other forms from puddled iron or steel, the ordinary puddling mill train of rolls for rolling the bloom after hammering or squeezing being dispensed with, whereby a great saving of time, labour, and cost of production is effected.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, January 30.—N° 322.

GRIMES, John.—“ Improvements in machinery or apparatus employed in the preparation or manufacture “ of the bottoms or soles and heels of boots and shoes.”

To the bed plate of a press is secured a block carrying a sharp edged die, and auxiliary knives or dies are adjusted in V slots to separate the refuse leather or other material from the piece punched or cut out. At the back of the press are adjustable guards held to the top edge of the die by levers actuated by grooved cams or otherwise; against these guards the material is pushed. Above the die is a faced block secured to the moveable head of the press and changeable at pleasure. This block and the head are depressed till the face just touches the sharp edge of the die so that the required piece will be cut out from the material and drop into a receptacle. The head is depressed by cams on the cam shaft which may lie under the bed of the press.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, January 30.—N° 323.

ALAND, Henry.—“ Improvements in rotary blowing fans for producing blast for furnaces and other “ purposes, which improvements may also be applied to air and gas exhausters.”

The novelty of this invention consists in the formation of a space between the sides of the fan and the outer casing laterally on each side; also the introduction of a conical ring inclining inwards round the periphery of the inlet opening of the case, thus directing a supply of air or vapour from the discharge side to the inlet of a higher density than the surrounding atmosphere; by this means affording the blades of the said fan a better impinging pressure by which to produce a more perfect vacuum for the introduction of the supply. Another advantage of this improvement is its durability and less liable to get out of repair.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 30.—N° 324.

HAMILTON, Milton Alexander. — (*Provisional protection only*.) — “ An improved apparatus for “ cutting bread, vegetables, and other substances.”

The said invention relates to an apparatus in which bread, fruit, vegetables, meat, and other substances and articles are cut or divided into slices by being forced over a fixed knife or knives, and consists chiefly in the combination of parts whereby a loaf or other article is supported in the proper position with regard to the said knife or knives to ensure the slices being cut evenly and smoothly and of any desired thickness. I prefer to employ one knife with a V shaped or concave edge, but if desired two or more knives or blades may be employed. The said knife or knives must be firmly secured to the top of a frame or stand of suitable size. The loaf or other article to be cut is placed upon a bed which is secured between the sides of the frame, and the thickness of the slices is regulated by varying the position of the bed with reference to the knife to increase or diminish the distance between the bed and the side of the knife.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 30.—N° 325.

HARTNELL, Wilson, and **GUTHRIE**, Stair.—"Improvements in or applicable to steam and other " motive engines, and to engines or apparatus for raising and forcing fluids or feeding steam boilers."

1. The improvements relate to an improved arrangement and combination of the parts of steam engines principally the direct connection of the cylinder (and condenser where used) and bearings of crank shaft by malleable metal bars, dispensing with any other framing.

2. In securing engines constructed according to the improvements described under head 1 to horizontal or vertical boilers, so that the boiler will be free to expand and contract, and will not be subjected to the working strains of the engine.

3. In arranging excentrics for working valves so that they can be partially rotated to reverse or vary the expansive working of the steam by governing the movements and positions of the excentric by a curved slot formed in the excentric, which gives a constant lead in every position.

4. The use of weights in fly wheels arranged to move to and fro radially and connected with the excentrics or valve gear so as to govern the speed of the engine.

5. Constructing pistons and rods by casting the piston upon a malleable rod and then turning and finishing.

6. The combination of two engines upon the principle of certain rotary engines, pumps, or blowers, formed by two wheels, vanes, or pistons, that gear or work one into the other. Steam is applied to one engine which drives the other, causing it to act as a pump, and raise or force water or feed a steam boiler.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, January 30.—N° 326.

MAINWARING, Edward Thomas.—"An improved bale or metallic tie."

The novelty of this simple arrangement consists in the deflection of the ends of the hoop and in the shank or shanks in combination with the tie, and the holding the said ends of the hoop and shank together by a sliding clip or clips.

[Printed, 8*d.* Drawing.]

A.D. 1868, January 30.—N° 327.

ROWAN, Thomas.—"Improvements in removing impurities, such as sulphur and phosphorus, from iron " and other ores and from coal."

The invention consists in adding common salt or other chloride or chlorides to the ore or coal and then calcining or coking it, after which the impurities are washed out with water in the form of soluble salts. Fluorides, bromides, or iodides may be substituted for the chlorides, but common salt (chloride of sodium) is to be preferred on account of its lower cost.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 30.—N° 328.

HAYNE, Benjamin.—(*Provisional protection only.*)—"Improvements in the mode of connecting beer " engine pipes with their taps."

The invention consists in connecting to the lower end of the beer engine pipe a short length of tube, the outer end of which of a slightly tapered form to fit a similarly tapered recess formed for it in the tap which is inserted in the barrel in the usual manner. The short length of tube has a lump or projection cast or fixed thereon to enable it to receive a blow from a hammer when it is desired to connect the parts together.

[Printed, 4*d.* No Drawings.]

A.D. 1868, January 30.—N° 329.

NEWTON, William Edward.—(*A communication from Jacob B. Moore.*)—"Improvements in window " sun blinds."

By means of counterbalance weights the blind is enabled to roll up and down on cords so that any part of the window may be covered or exposed as required.

[Printed, 6*d.* Drawing.]

A.D. 1868, January 30—N° 330.

BULL, William.—(*Provisional protection refused.*)—"Improvements in vacuum and pressure case moulds, " and in machinery for perforating the same, for the manufacture of fibrous articles in one piece without " seam or joint."

The novelty consists, first, in forming vacuum or pressure case-moulds of unperforated metal, and in perforating the same when formed to the required shape and configuration. Secondly, in an universal motion table and face-plate drilling machine for perforating the said cases. The fibrous articles are formed by depositing layers or one thickness of fibre in or upon the said moulds.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 30.—N° 331.

ROECKNER, Carl Heinrich.—(*Provisional protection only.*)—"Improvements in machinery for the "manufacture of paper."

This Provisional Specification describes,—

1stly. Placing an endless cloth under the wirework where the stuff enters to prevent the water flowing off too freely.

2ndly. Placing suckers or wipers under the wirework.

3rdly. A sucking dandy roller.

4thly. Forming the surface of coutch rollers of india rubber.

5thly. Taking the paper off the wire at about the point where the wire leaves the lower coutch roller. A roller is applied underneath the lower coutch roll to receive the paper at the point where it would otherwise fall off from the wire.

6thly. Using india rubber for press rolls.

7thly. Receiving the paper between endless cloths which carry it over drying cylinders.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 30.—N° 332.

THOMPSON, John.—(*Letters Patent void for want of Final Specification.*)—"Improvements in feeding "bottles for invalids and infants."

This Provisional Specification describes applying to feeding bottles a plug of porous material which will allow air to enter the bottle when fluid is withdrawn therefrom.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 30.—N° 333.

CLARK, Alexander Melville.—(*A communication from Pierre Augustin Samuël.*)—"Improvements in "adjustable wrenches."

These wrenches are applicable more particularly for screwing round nuts and other circular parts. I form or fix a double cam on the head of the wrench, on either side of which cam is pivotted a lug piece carrying the adjustable gripping jaws, the ends of which embrace the part to be screwed up, and by exerting tractive force on the lever handle the cam causes the jaws to grip said part as desired. The inner ends of the jaws are received in recesses on either side of the cam when opened to their widest position to enable the wrench to be removed after screwing up the part.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, January 31.—N° 334.

ADAMES, Charles Henry.—"Improvements in the manufacture of portable metal buckets or pails and "tubs."

This Provisional Specification describes improvements in the manufacture of portable metal buckets or pails and tubs similar to those in general use for domestic and other purposes, and consists in forming them with vertical or diagonal corrugations or grooved indentations passing from top to bottom of the vessel, the hoop or foot being corrugated in a horizontal direction, by which means they are rendered much stronger both laterally and perpendicularly.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 31.—N° 335.

FLEET, Edward.—"Improvements in apparatus for the manufacture of aerated liquids."

This apparatus is chiefly applicable for syruping aerated liquids, and consists of a cylinder provided with a piston connected by means of a cross head and connecting rods to the lever arms of a shaft mounted at the lower part of the apparatus.

The cylinder is placed in communication with the reservoir of syrup by means of valves, and also with the nozzle at which the bottle is held for filling. By partially rotating the shaft by a lever handle the piston is raised in the cylinder for taking in a certain quantity of syrup, which is then discharged into the bottle by reversing the motion.

After this the aerated liquid is introduced into said bottle by completing the motion of the shaft, a tappet thereon opening a valve for the purpose, and when full the motion is reversed and the valve closed. This apparatus is also applicable for mixing magnesia and other aerated liquids.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 31.—N° 336.

WALKER, JOHN, and HUDSON, JAMES.—" Improvements in machinery for turning and cutting wood " and other substances."

Our improved machinery is particularly adapted for turning bobbins and spools, but may be used for other articles, and consists of a series of revolving spindles and mandrils supported by discs, to which an intermittent motion is given for presenting the blocks of wood or other substance in succession to a series of cutting and polishing tools which are traversed to and fro over the article to be turned. The finished articles are taken off the mandrils and fresh blocks are put on the mandril without stopping the machine.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 31.—N° 337.

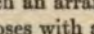
JOHNSON, JOHN HENRY.—(*A communication from Edward Nicoll Dickerson.*)—" Improvements in " steam engines."

This invention relates to the valve gear of steam engines required to be reversed when in use, and has for its object the remedying the defects whilst retaining the advantages of the "link-motion" as now commonly used. The essential features of this invention consists,—

Firstly. In the use of a reversing link which is vibrated by a single eccentric capable of being moved in the direction of its length for reversing suspended at its neutral point by a radius bar or equivalent device upon which it vibrates, and upon the opposite sides of which it works the valve for the forward and backward motion of the engine, the whole being combined with any suitable independent cut-off apparatus for closing the ports opened by the valve.

Secondly. In the employment of an independent "cut-off" apparatus rendered capable of adjustment whilst the engine is in motion by altering the angular position of the eccentric which actuates the independent "cut-off" slide in reference to the line of the crank.

Thirdly. In the combination of a pin or block fixed in the main or crank shaft with a tubular shaft fitted upon and surrounding the main or crank shaft, to which tubular shaft the "cut-off" eccentrics are fixed, and with an exterior sliding collar surrounding the said tubular shaft, and provided with two grooves, one of which receives the end of the fixed pin, whilst the other receives a block or pin fixed upon the aforesaid tubular shaft, and one or both of which grooves are made spiral, the whole combination having for its object the varying the angular position of the "cut-off" eccentrics upon the main shaft.

Fourthly. Of a graduated opening of the main port or valve, the outside edge of the port or ports being **V** or  shaped in lieu of the parts being perfectly rectangular as heretofore in combination with such an arrangement of the exhaust openings as that one exhaust aperture will be opened before the other closes with an independent adjustable "cut-off" for the purpose of preventing a "cushion" of the steam, and the shock of sudden admission without "wire-drawing" the steam through the graduated opening in "cutting-off." By the use of this invention the steam valve is not opened until the piston reaches the end of the stroke or a little later, and is then opened very gradually for a short time. Whilst the steam valve remains open it supplies the cylinder with steam without any material reduction of pressure in consequence of a contracted opening. When the "cut-off" slide closes the port its motion is so rapid as to be practically instantaneous. The exhaust valve does not release the steam until its force is effectually expended, and then it opens so rapidly as to release the steam instantly; and as the opposite valve does not close until the piston has reached the extreme end of the stroke no "cushion" of steam is formed.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, January 31.—N° 338.

ANDREWS, EDWIN.—(*Provisional protection only.*)—" Improvements in trousers and breeches or other " similar articles of wearing apparel."

The novelty consists in,—

Introducing india rubber or other flexible material into slits cut or formed near the waist in the back part of trousers, breeches, or other similar articles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 31.—N° 339.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Marie Elisabeth Gihaut.*)—(*Provisional protection only.*)—" A new and improved advertising vehicle."

This invention relates to a new mode of diurnal and nocturnal publicity by means of vehicles with translucid pannels lighted inwardly after dark.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 31.—N° 340.

CHAPMAN, HENRY.—" Improvements in bolts, nuts, and washers."

This invention consists in forming upon the pressing surfaces of the nuts or the heads of bolts, or upon the washers used therewith, serrations or projections so formed that while they allow the nut to be turned so as to be screwed or tightened they will prevent its turning in the reverse direction so as to become unscrewed or slacked by indenting themselves into the meeting surface against which they are pressed. The washer, nut, or head of the bolt upon which the serrations are formed must for this purpose be made of a harder metal than that of the surface against which it presses.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 31.—N° 341.

MITCHELL, JOHN, junior, and GRAHAM, GEORGE THOMSON.—" Improvements in apparatus for " marking or cutting woven fabrics into lengths such as are required for making sacks."

This invention relates to improved apparatus by means of which time and labor may be saved, and increased accuracy be secured, in cutting up woven fabrics into lengths for various purposes, such for example as the making of sacks.

The improved apparatus comprises a roller or other convenient appliance for drawing or moving the fabric through the apparatus, driven by any suitable gearing which also drives or acts in concert with a cam, crank, or equivalent appliance arranged to cause a marking or cutting instrument to act periodically on the fabric. With such details there is by preference combined any convenient counting mechanism which can be arranged to stop the machine or to sound an alarm on a certain number of lengths being marked or cut, or merely to record the number of lengths marked or cut.

[Printed, 8*d*. Drawing.]

A.D. 1868, January 31.—N° 342.

BOLTON, EDWARD.—(*Provisional protection only.*)—" Certain improvements in the manufacture of gun- " powder and similar explosive compounds."

The improvements consist in manufacturing or preparing the composition with the following ingredients and in about the proportions given, but the latter will vary according to the different strengths or power of powder required. I take carbonate of copper about eight parts, graphite about ten parts, prepared quicklime about fifteen parts, prepared alum about fifty parts, nitrate of soda about three hundred and fifty parts, soda ash about twenty parts, ferrocyanide of potassium about three hundred parts, charcoal about thirty parts, prepared sugar about three hundred and fifty parts, carbonate of potash about four hundred and fifty parts. One half the graphite and one half the charcoal are to be combined with the carbonate of copper, lime, nitrate of soda, soda ash, and carbonate of potash, to constitute one part of the powder; the other halves of the graphite and charcoal being combined with the other ingredients to form another part of the powder; and in this partly combined but divided state each powder is inexplosive and consequently harmless, and when required for use the mixture of the two renders the whole highly and powerfully explosive.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 31.—N° 343.

SCOTT, GEORGE LAMB.—" Improvements in apparatus for steering ships."

This invention consists in an arrangement of gearing between the helm and the rudder, arranged with suitable bearings and casing, whereby the apparatus is complete in itself and may be adapted in a complete form to the ship.

[Printed, 10*d*. Drawing.]

A.D. 1868, January 31.—N° 344.

HOWELL, SAMUEL EARNSHAW—" Improvements in suspension bridges."

This invention consists in using combined strips of metal in place of chains, ropes, or other such suspending parts used in suspension bridges.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 31.—N° 345.

LIVESEY, James.—"An improved material that may be used as a substitute for glass."

The invention consists in the production of a material that may be used as a substitute for glass, and which is flexible and lighter than glass and not liable to be broken.

The material employed for the purpose is wire gauze or other open work, with the meshes or spaces filled in or covered over with a transparent composition or substance capable of withstanding the effects of atmospheric changes and moisture.

The material may be manufactured either plain or in colors.

[Printed, 4*d*. No Drawings.]

A.D. 1868, January 31.—N° 346.

FRAME, John.—" Improvements in transmitting motive power, and in mechanism or apparatus employed " therefor."

This said invention consists generally in a new or improved mechanical arrangement (susceptible of various modifications to suit particular applications and cases) for transmitting and changing rectilineal reciprocatory motion into circular motion in motive power engines and other machines in which such is necessary or required for transmitting motive power for various purposes, and also *vice versa*, for transmitting and changing circular motion into rectilineal reciprocatory motion in motive power engines and other machines, such as in the actuating of pumps, planing, slotting, and nibbling machine tools; punching, shearing, rivet making and rivetting machines; in actuating the tables and pressing surfaces of printing, embossing, and stamping machines; brick making and other compressing machines, and other such heavy machines and tools in which the reciprocatory motion has generally to be taken from the centrar or body part of a long shaft or line of shafts, by cranks formed thereon, or by large eccentrics and straps and their connecting rods all as at present constructed and used, which involve considerable complication and inconvenience, and great expense as compared with the improvements under this said invention for accomplishing the same or like purposes.

And the invention essentially consists, under one modification, of an eccentric ring or annular recess or a projecting rim formed laterally in or on a disc or web with a boss or eye keyed or otherwise secured to the revolving shaft, whether it be that of the actuated or actuating shaft for any of the adaptations or purposes herein stated. A segmental bearing and oscillating block is made to work into the annular eccentric recess or groove or over the eccentric rim, having a pin projecting out laterally from it, which is by preference directly connected to the rod, frame, or other part of the machine which is required to reciprocate rectilineally by a bush, into which it works or oscillates along with the bearing block as the eccentric and revolving shaft turns round, whether the shaft is actuated by or is actuating the reciprocating part. The reciprocating rod or parts of the machine may be guided by the present parallel guides or motions at present in use for the like purpose in a line through or crossing the axis of the shaft radially and at right angles to it on one side; and when only one rod is so worked in in the same plane it may be made double or forked at its free end, so as to embrace and work on each side of the revolving shaft towards the other side, which would thus form a most simple and satisfactory parallel motion for the reciprocatory rod or part.

The reciprocating rod or part may also, when desired, work tangentially to the eccentric ring or annular recess at right angles to the radial reciprocatory action of the eccentric pin, which in this case would be connected to the reciprocatory rod or part by a connecting rod, the free end of which would oscillate as nearly radially or at right angles to the motion of the reciprocating part as possible, or the pin might be made to work in a transverse slot formed in the reciprocating rod or frame at right angles to its motion, and radially to the shaft at half stroke. When different lengths of stroke of the eccentric pin and its reciprocating connections are required it is preferred to have the eccentric hollow ring or rim and its web or disc made large enough to give the maximum stroke desired, and have it fitted and secured by a moveable slide to a fixed slide on the face of a disc or duplex arm with a strong boss firmly keyed or otherwise fixed to the revolving shaft so that the eccentric rim may be shifted on the fixed slide and disc or arm to any less stroke or concentric with the shaft, in which position the pin and its attachments would have no motion. Or otherwise the eccentric ring may be made to rotate in a curvilineal manner on the face of the fixed disc so as to shift its axis to different radial positions and distances of " stroke " off the centre, as required in some cases for working the valves of steam engines for stopping and reversing their motion; or otherwise the disc and boss with eccentric ring either formed on it or firmly fixed to it may be made to shift to different positions round the shaft in the same manner that ordinary eccentrics have heretofore been arranged and made for the like purpose of reversing the motion of motive power engines.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, January 31.—N° 347.

CLARK, Alexander Melville.—(*A communication from Charles Julien Quétil.*)—" Improvements in " steam engines and in parts connected therewith."

The improvements consist, first, in the general arrangement of the parts of a steam engine. In the example described the exhaust takes place through the piston and between the two cylinders, or more may be used, the steam being conveyed to the steam chest by means of pipes at the side and centre. The crank pins are fixed in cast iron sliding parts fixed to the driving shaft and working up and down in the slide bars keyed to the piston rods. When working at full pressure two eccentrics are used, but when a cut off is to be used I add two others. The eccentrics act on sliding frames, to which the slide valve rods are fixed. Channels are made in the piston which when it reaches the end of the cylinder correspond with the exhaust port, and on the piston returning the steam enters at full pressure, closes one valve and opens the other. Valves may also be placed outside the piston instead of the channels, acted on by projections operated by the piston. By the arrangement described and illustrated in the drawings I work one double acting cylinder with one eccentric and two slide valves, and when employing a fixed cut off use a second eccentric and two other slide valves carried on the same rod. Four double acting cylinders may be used, the piston rods being connected to the same sliding parts before mentioned.

The second part relates to a reversing motion obtained by the aid of the eccentric which is provided with a slot to permit of its moving on the shaft to the right or left by means of a lever connected to the eccentric strap, the eccentric being thrown in or out of gear with the shaft by a clutch. The motion of the slide valve may also be varied by this improved eccentric without using a Stephenson link motion. The slot in the eccentric and shaft may also have a flat surface above and below for causing it to revolve therewith and serve as a guide in sliding it thereon. The various positions of the slide valves and eccentrics are detailed in the drawings.

The third part relates to metallic packings used instead of ordinary stuffing boxes; these packings consist of iron or steel rings suitably placed on the rods cut through at opposite points and made either of cylindrical or conical form, the covers being made of a form suited to that of said packing rings ; or the rings may be enclosed by segments caused to press on the rings.

[Printed, 13*s.* 10*d.* Drawings.]

A.D. 1868, January 31.—N° 348.

CLARKE, George.—" Improvements in fire-escapes."

This invention has reference to the well known construction of fire escapes as made by the Patentee.

One improvement consists in the application of a diagonal wire truss to the back of the main ladder to keep it from twisting sideways.

Another improvement consists in providing the guiding quadrants with three pulleys for the side trusses to pass over in place of only one as before.

Another improvement consists in forming the levers to the fly ladder with additional arms carrying cheek ropes, and in working the ropes of the fly ladder by means of a windlass fixed to the lower end of the main ladder instead of by hand.

Another improvement consists in substituting wheels or large pulleys for the said levers, worked by means of endless cords from a crab below provided with a brake.

Another improvement consists in the employment of a collapsible tube of canvas or other material in place of the canvas and wire gauze trough now fixed along the back of the main ladder. The tube may be provided with india rubber rings to make it collapse as much as possible, and may have one or more side openings for introducing objects.

Another improvement consists in providing the fly ladder with a second ladder sliding in grooves and made to slide and extend beyond the fly ladder when required by means of ropes worked from below by means of the crab, which is provided for this purpose with a shifting pinion.

Another improvement consists in arranging the front wire stays so as to form hand rails to the main ladder by being attached to arms projecting therefrom instead of to the bottom hand lever as at present.

Another improvement consists in providing " Scot blocks " with flanges for placing behind the wheels in order to prevent the escape from shifting its position.

Another improvement consists in providing the escape with a hose reel or with a box containing hose placed upon the axle of the wheels.

Another improvement consists in fixing sheaves or pulley blocks at the upper end of the ladder for raising or lowering objects.

[Printed, 1*s.* Drawing.]

A.D. 1868, February 1.—N° 349.

MOULTON, George.—(*Provisional protection only.*)—" Improvements in pentagraph engraving machines " employed in the engraving of cylindrical or other surfaces."

This invention relates to means for readily reversing the motion of the tool bar in engraving machines when it is required to "turn the pattern over." This is effected by actuating the tool bar through an endless band of steel or other suitable material, the said bar being connected to one portion of the band, or to a portion moving in the contrary direction, according as the movement of the tool bar is required to be in the same direction as the bar moved by the pentagraph or contrary thereto. In one arrangement the said band is actuated by a pulley to which it is attached, the said pulley being rotated by a band or by bands attached to the said pulley and to the bar moved by the pentagraph, The tool bar is connected to the portion of the band moving in either direction as above mentioned by means of clips operated upon by a screw so that one of the said clips is released from the band at the same time that the other is tightened thereon. The "stepping" can readily be effected by moving the tool bar the requisite distance with both clips released.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 1.—N° 350.

JONES, Jerome Valentine, and **WILLIAMS**, George James.—" Improvements in the manufacture " of metallic tubes and in machinery used in the manufacture of metallic tubes."

One part of this invention consists in giving to the open joint of open jointed tubes a helical or screw like figure instead of making the said open joint parallel to the axis of the tube as is usual, by which means the tubes are made more rigid than ordinary tubes and are not liable to open when made up into metallic bedsteads or other articles and thereby to disfigure the ornamentation of the tubes.

Another part consists of a machine for making taper tubes. The said machine is composed of three rolls nearly touching each other, one roll being conical and being geared to one of the other rolls. The flat sheet or trough of metal is introduced between the conical roll and that geared to it, and by their motion is carried between the conical roll and the third roll and bent upon the conical roll into an open jointed taper tube.

[Printed, 6*d.* Drawing.]

A.D. 1868, February 1.—N° 351.

SMITH, Robert Catanach.—" Improvements in the arrangement or construction of sinks or similar " apparatus."

The feature of novelty which constitutes this invention is the construction of sinks or troughs with a vertical ledge or projection on the back and two ends, whilst the front side is formed with a lip or overhanging ledge so that the destruction of the fixings connected with such apparatus may not occur by means of the water overflowing on all the four sides as at present.

[Printed, 6*d.* Drawing.]

A.D. 1868, February 1.—N° 352.

AITKEN, Henry.—" Improvements in treating iron ores or iron stones for the purpose of obtaining " products therefrom, and in the means employed therefor; also improvements in ovens or 'draw kilns' for " carbonising iron ores or iron stones."

The feature of novelty which constitutes this invention is, the coking or carbonising of the iron ores in any convenient kind of retort, kiln, or oven, or on a platform or bed of clay, brick, stone, iron, or other material so that the volatile matters may be driven off and used or preserved for future use.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 1.—N° 353.

CLARK, Adolphus, and **VAN WINKLE**, Abraham.—(*Partly a communication from Gustavus Davis Dows.*)—" Improved apparatus for manufacturing and storing aerated waters, and for transferring these and " other liquids from one vessel to another."

This invention consists principally of a metallic generator and acid pot lined with lead, and the parts bolted together with rings and flanges. The acid pot is above the generator and supplied from the top with acid, the flow of which into the generator is regulated by a valve. The gas producing materials with which the generator is charged from the top are agitated by paddles moved by a crank and handle. The gas outlet is at the top from a small dome with a guard or curtain before the outlet.

The principal pipes from the gas outlet passes to the purifiers, whence the purified gas passes thro' a flexible tube to the storing reservoir or fountain. This fountain and the purifiers are of tinned copper or of iron with a separate lining of sheet tin, the parts being bolted together with flange rings and flanges. The communication with the fountain is by means of a flexible tube, a clamp joint, and a valve or tap of peculiar construction.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 1.—N° 354.

CLARK, ALEXANDER MELVILLE.—(*A communication from Edouard Armand d'Hurcourt.*)—"Improvements "in the mode of utilizing and increasing the lighting power of gases and inflammable vapors and in "apparatus connected therwith."

The invention consists, 1st, in projecting a mixture of gases or carburetting and inflammable gases for lighting purposes on an infusible body, such as lime, magnesia, or platina, so as to produce a white light by the ignition of the gases. I may use for the purpose atmospheric air and lighting gas in the proportions of one part of gas to one, two, or three, parts of atmospheric air, or one part of oxygen to two, three, or four of lighting gas, or a mixture of air and oxygen or protoxide of azote and lighting gas to be in all cases inexplosive.

2ndly. In the application of the hydrogen burner with a platinum gallery, or it may be of porcelain or steatite to this mode of lighting.

3rdly. In a mode of mixing these gases at the meter either by using two meters on the same axis, one for containing air, oxygen or other carburetting agent, and the other the gas or inflammable vapor, which are then mixed and pass to the pipes after passing through a suitable regulator. A pump may be used for imparting the desired pressure to the mixture driven by any suitable motor, such as a gas engine. Two bell receivers immersed in water may also be used, one for the gas and the other for the air; or two bellows may be employed, each contained in a separate case for mixing the air with the gases.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 1.—N° 355.

MURRAY, DUNCAN.—"Improvements in coverings for the head, which improvements are also partly "applicable to the protecting or covering of the mouth and neck."

This invention has reference to an improved form and construction of hat or covering for the head, and of appliances to be used in connection therewith when desired for protecting and covering the mouth and neck of the wearer, such head coverings being adapted either for male or female use. According to this invention it is proposed to give the hat the form of a helmet, and to construct the same of any of those materials now employed for the construction of hats, or of any suitable rigid or partly rigid or stiff material, such as plaited straw, leather, stiff felt, papier mache, cardboard, or other like materials. Upon the crest of the helmet there is laid in suitable folds, so as to give a graceful contour to the whole, some soft or pliable fabric, such as cloth or other textile material, the fabric being coiled under in a volute form at the head or front of the crest to give a pleasing finish to the head dress at that part. One of the folds of the fabric (which may be considered to a certain extent as the trimming of the hat should be stiffened slightly by a suitable lining if it be not in itself sufficiently stiff to maintain the form of the fold, as it is essential for purposes of ventilation that this fold should serve as a tubular outlet for the warm air from the interior of the hat, one or more holes being made in the top of the hat or covering communicating with the tubular fold referred to. In conjunction with this arrangement it is proposed to leave a space at the front of the hat between the inner lining and the body for the free inlet of cool air, so that a constant circulation of air shall take place through the front part of the hat and out at the back by the tubular fold before referred to.

The body of the hat is formed with a brim at the sides only in lieu of extending completely round, and this brim may be made of any desired width, or inclined down at any angle, or turned up or curled more or less to suit taste and fashion. If desired the fabric on the crest of the helmet may be made to uncoil more or less at the front part in order to admit of its being drawn down at the back and so form a protection to the back of the neck from sun or rain; but at all times the folds of fabric above referred to will form a soft or yielding external padding, allowing the wearer to rest the back of the head when travelling or otherwise with comfort. It is further proposed in some cases so to arrange this portion of the head dress that its lower portion shall form when partly uncoiled and drawn down a muffler or covering for the mouth and throat by being brought to the front of the wearer. Or in lieu of making this part of the head dress adjustable it may be fixed and be padded if required with wadding or other padding in order to impart the desired form thereto and preserve the shape when in use, in which case a separate muffler or hood may be attached when required for use by hooks and eyes or other convenient fastenings to the back part of the body of the hat.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 1.—N° 356.

JAMESON, John.—" Improvements in the preparation of postage and other stamps, and in the obliteration " of the same."

This Provisional Specification describes preparing stamps by arrangements involving the visible design of the stamp itself or one or more invisible or more or less visible designs thereon which it would be difficult to imitate, in the obliterating process or in any process of test which may be adopted, and at the same time in preparing the obliterating ink in such manner as to deposit on the stamp such chemicals as would ensure the developement of distinct obliterating marks if a redevelopement of the design by chemical means be effected.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 3.—N° 357.

BROOMAN, Clinton Edgcumbe.—(*A communication from Henry Gurney Morris.*)—" Improvements in " steam and water valves, cocks, and faucets."

This is to prevent leakage round the stems of steam or water valves or faucets. To operate the valve a stem is used, which can be turned by a wheel by means of a spline or feather. The stem has a collar, which is seated upon a centre-piece, forming with it a steam or water tight joint, the pressure of the steam, combined with that of a nut upon the stem above the turning wheel, holding the collar up to its seat, or instead of the nut a spring or rivet may be used. Below the collar the form in section of a square polygon or key is given to the stem, or a spline or feather is placed in the same, so that it can be entered into a sleeve within a valve spindle or screw fitting loosely in the same, so that when the stem is turned the spindle sliding freely upon it will be raised or depressed by means of a thread on the outside of the spindle, which runs in a nut formed in the centrepiece.

[Printed, 8*d.* Drawings.]

A.D. 1868, February 3.—N° 358.

FORD, Benjamin.—(*Provisional protection only.*)—" Improvements in hot air stoves for blast furnaces in " the manufacture of iron."

The features of novelty which constitute the invention are, the method I employ for staying the pipes to prevent them from bending, and the improved arrangement described for removing and fixing the pipes and also for regulating the temperature of the stove.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 3.—N° 359.

TOLSON, James.—(*Provisional protection only.*)—" Improvements in means and apparatus for fettling or " cleaning the cards of scribbling or carding engines or other machines having cylinders or rollers clothed " with cards used in the preparation of wool, cotton, or other fibrous substances."

The novelty consists in,—

The employment or use of self cleaning revolving combs, or a series of combs placed eccentrically within a rotary cylinder, so as to work or move in and out through slits in the rim thereof as the cylinder rotates, which combs or cylinder is temporarily fixed to the ordinary frame of the carding engine, in contact with the card, cylinder, or roller to be cleaned, and rotary motion given to both of them, the cards in a contrary direction to its working, and also to the combs.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 3.—N° 360.

WEEMS, John, and WEEMS, William.—" Improvements in machinery, apparatus, or means for heating " and drying grain and other vegetable products, fabrics, paper, yarns, fibrous materials, and other " substances."

We dry grain and other substances by means of steam heated screws revolving in steam heated cylinders in a rapid and continuous manner.

Another modification consists in passing the material to be dried through spaces between steam heated plates in a hot air chamber. Another plan consists of a revolving cylinder divided into compartments formed of steam heated plates or other material enclosed in a hot air chamber. The material to be dried is retained in its place by means of an endless apron or web. In drying woven fabrics we force or draw a current of hot air through the fabric. For drying hanks of yarn we employ a disc, with revolving spindles around its periphery on which the hanks are placed; a lower disc with spring spindles stretch the hanks, and a cam gives them a jerking motion during the process of drying. Another plan consists in having carriages containing the wet material passed through a hot air chamber. Another modification consists in using steam or superheated steam for heating, drying, or partly drying the materials, and completing the drying with a current of hot air.

The hot air for drying is produced by forcing or drawing a current of cold air through the interior of tubes, the external surface of which are surrounded with superheated steam.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 3.—N° 361.

WILSON, Maria Alice.—" Improvements in spring and other mattresses, couches, and cushions."

The invention consists, first, in providing air channels for the purposes of ventilation in mattresses, palliasses, couches, sofa, chair, railway, and other carriage seats, cushions, or pillows. For this purpose I make circular openings in the packing of the mattress or other article and distend them by means of spiral springs, which keep the perforations always open, whatever may be the pressure thereon, to allow of the free passage of air through the said mattress.

Secondly. The invention consists in applying these improvements to mattresses used for medical purposes in which the orifices therein serve to carry away water used for douche and other baths. Steam may also be introduced through such perforated mattresses to act on the patient placed thereon.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 3.—N° 362.

COMBE, James, and BARBOUR, James.—" Improvements in machinery for hackling and scutching " flax and other fibrous substances."

These improvements consist in actuating hackles in such a manner that at each time they penetrate the material they only act upon a portion of its length; and they can thus be made to strike into it at right angles and nearer to the nip or holder than has hitherto been accomplished.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 3.—N° 363.

DOMENECH, Jose Maria, and JONTE, Frederic Pierre.—" Improvements in combined photo- " graphic apparatus for out-door operations."

A package to be carried on the back contains the camera with all the requisites for taking a view. A flexible cloth covers the entire apparatus as well as the operator and serves the purpose of a tent. On fixing the box upon the tripod stand it at once opens out into a large and convenient tent with the lens and camera attached in front.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, February 3.—N° 364.

JOHNSON, John Henry.—(*A communication from Francois Coignet.*)—" Improvements in the treatment " of bones."

In the manufacture of gelatine from bones, the bones are subjected to the action of hydrochloric acid, which dissolves the phosphate of lime and other compounds of lime, and the residual constituents of the bones are left in a soft pliant condition, which material is employed for the production of gelatine as is well understood. Now this invention has for its object the employment of phospheric acid as a solvent of the phosphate of lime and other compounds of lime contained in bones, by which means they are rendered soft and pliant, suitable for the production of gelatine, and the soluble acid phosphate of lime resulting therefrom is capable of being advantageously employed for useful purposes in the arts.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 3.—N° 365.

WEST, Joseph.—(*Provisional protection only.*)—" An improved method of and composition for preventing " the formation of scale in steam boilers."

This Provisional Specification describes painting the interior of a boiler with a composition sufficiently tenaceous to adhere to the boiler during use, but which slowly wastes away so that it offers no permanent surface for scale to attach itself to.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 3.—N° 366.

RICHARDSON, Charles.—" Improvements in looms for weaving."

This Provisional Specification describes improvements in looms for weaving in which the shuttles are actuated by the direct action of compressed air.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 3.—N° 367.

LAKE, William Robert.—(*A communication from William George Rule.*)—" Improvements in leggings " or gaiters and other like articles."

The said improvements relate more especially to waterproof coverings for the legs, and consist chiefly in the combination of a peculiarly constructed elastic metal frame with the leather, cloth, or other covering material, which frame allows the legging, gaiter, or other article to be readily and securely attached to the leg, and to be quickly removed therefrom without the use of buttons, studs, catches, or other like fastenings, and the consequent trouble and soiling of the hands in adjusting the same. The metal frame consists of two side pieces united at their extremities to coil or scroll springs, one of which encircles the leg above the calf and the other at the ankle. A strap to pass under the foot may be attached to the bottom of the legging or gaiter.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 3.—N° 368.

WRIGHT, Henry Benjamin.—(*Provisional protection only.*)—" Improvements in apparatus for sweeping " chimneys."

My improvements relate to an apparatus which may be conveniently applied to the chimneys of dwelling houses and other buildings, and which may be easily used at any time by an ordinary domestic servant. The said improvements consist chiefly in the combination of a brush or scraper with a frame extended above the chimney top or pot, and with a box or receptacle for receiving the soot. The brush is operated by a chain or rope passing over two pulleys, one of which is supported in the top of the box and the other in the frame. The said invention also partly consists in the peculiar construction of the brush or scraper, which is formed in two or more parts, each part having metal wires or strips properly fixed to act on the surfaces to be swept, and the parts being connected in such a manner as to allow the brush to adapt itself to the form of the chimney. The said invention also consists in connecting the brush to the main chain in such a manner as to keep the said brush always in the centre of the chimney.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 3.—N° 369.

OFFORD, Joseph, and HALE, Shepard William. —" Improvements in public and private carriages " and vehicles in regard to opening and closing the heads or hoods of those having moveable heads or hoods, " and opening and closing the doors of public and private carriages and vehicles generally."

This invention consists in the use of disjointable cords or chains attached to the heads or hoods passing from the tops of the same direct to the driver's seat, a winch being there placed by which he may raise and lower and thus open and close the head.

Doors are closed by a cord and pulley, the end of the cord being placed so that the coachman may pull it.

Doors may be made to open either way to prevent accidents, by having two dovetailed pillars on each side of the door, two locks, and two sets of hinges.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 3.—N° 370.

WALLIS, William, and MANT, George.—(*Provisional protection only.*)—" Improvements in stands or " supports for lasts used in the manufacture of boots and shoes."

The improved stand or support constituting this invention consists essentially of the following parts:—A foot, which is screwed to a table or work bench; a pillar or upright turning in the said foot and fixed by a clamping screw; a ball and socket joint at the top of the pillar or upright; and a rod fixed to the ball of the joint, to which rod the last is affixed. The upper hemisphere of the said joint has a slot in it which allows the rod carrying the last to take any position more or less approaching a horizontal position. A collar on the rod serves to fix it when required in a vertical position. By the arrangements described the last can be brought into any required position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 4.—N° 371.

JOHNSON, John Henry. — (*A communication from Samuel Betton Henry.*)— " Improvements in the " treatment of compressed or embossed wood."

This invention consists in the manufacture of articles of embossed wood coated or saturated either before or after embossing with a solution of caoutchouc or other equivalent gum, which when dry serves to retain the fibres of the wood in the condition to which they have been compressed, and renders the wood impervious to moisture as set forth, and subjecting the embossed wood, after being treated with the solution of caoutchouc or other equivalent gum, to the vulcanizing process.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 4.—N° 372.

JONES, Ralph Augustine.—"An improved warming and ventilating vessel or apparatus applicable to stoves and other heat suppliers."

This vessel or apparatus is formed as a cylindrical pot, or made of other suitable form, so as to be readily fitted on or made as a part of a gas stove or other stove, or used over a gas ring or other burner, though it may be used in connection with other heat suppliers.

The vessel or apparatus is provided with a tube or tubes, chamber or chambers, with openings at the exterior of the vessel or apparatus, so that some or one of them may be placed in communication with the fresh air exterior to, or any air renovator, and one or some others may open into the room or place to be warmed and ventilated. Water should be used in this vessel or apparatus.

Hereby fresh warm air will be supplied which may be vapourised by allowing heat from the warm air pipes to act on the water.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, February 4.—N° 373.

GRETHER, Ernest, and BAILEY, Mark.—(*Provisional protection only.*)—"Improvements in machinery for cutting discs or washers of india-rubber and other substances."

Our invention consists in placing india rubber or other cords or cylinders in hollow tubes, which are turned rapidly round, and in applying a knife to the end of the tubes; this knife moves quickly to and fro and cuts off the ends of the cords or cylinders projecting through the tubes, thus forming discs or washers of any required thickness.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 4.—N° 374.

LEWIS, John, ALSTON, Richard, and ALSTON, Edward.—"Improvements in moveable fire-bars."

The novelty of this invention consists of,—

Firstly, a thorough cleansing of the bars from consumed dust before it has time to clinker, and if allowed to clinker a complete breaking up of such clinker, and giving a free admission to the air to pass between the bars, creating almost perfect combustion.

Secondly, a perfect fire beating is effected without opening the fire door and admitting cold air (so objectionable) above the fire.

Thirdly, a great saving of labour.

Fourth, and last, a great saving of fuel from the non-admission of cold air, and nearly a perfect consumption of smoke.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 4.—N° 375.

DESENS, Louis.—(*Provisional protection only.*)—"Improvements in the construction of miners' lamps."

The object of this invention is, that in case of clandestinely opening the lamp the light is extinguished.

The wick holder, which is supported in the interior of a tube of larger diameter, is furnished with a rack gearing with a small endless screw attached to a shaft which passes through the body of the lamp, and by which the wick is regulated.

Round the external tube bearing the holder is a rundle having two projections, the longest of which, when the top of the lamp is screwed on, acts on a movable projecting piece attached to the plate supporting the glass, and pushes it aside each time it passes, so that in this case the wick is not interfered with; but in unscrewing the lamp the projecting piece resists that of the rundle and causes the latter to turn round, which disengages the rack from the screw, and the wick holder and wick then fall into the body of the lamp and the light is immediately extinguished.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 4.—N° 376.

DEWAR, James.—"Improvements in preserving animal substances for use as food."

Combining the application of an aqueous solution of sulphurous acid with subsequent desiccation for preserving animal substances for use as food.

[Printed 4*d.* No Drawings.]

A.D. 1868, February 4.—N° 377.

MORTON, Robert.—" Improvements in refrigerators or apparatus for cooling liquids, parts of which " improvements are also applicable to distillation, surface condensation, and heating air for blast furnaces " or other purposes."

Improvements on a former Patent, N° 939, 1862.

Consist in arranging certain portions of the tubes forming the apparatus on a hinged frame to facilitate the operation of cleansing, increasing the cooling power by forming the tubes zig zag or corrugated, using freezing mixtures and attemperated air or compressed air cooled by expansion to a low temperature.

When the apparatus is used for heating air I propose to form it of fire brick instead of metallic substances.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, February 4.—N° 378.

MORGAN, Edward Aikman.—(*Provisional protection only.*)—" Improvements in apparatus for spinning " or twisting."

This invention relates to spinning or twisting apparatus of the kind in which a small segmental ring or its equivalent running round an annular or ring-shaped rail or guide ring encircling the spindle acts as a flyer, and in consists in making the guide ring of glass, earthenware, or similar material, which requires no lubrication.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 4.—N° 379.

SCOTT, Thomas.—(*Provisional protection only.*)—" Improvements in kilns or apparatus for drying grain " or other granular matters."

This invention has for its object the drying of grain or other granular matters in a rapid, uniform, and economical manner. The improved apparatus comprises one or more revolving discs upon a vertical shaft, either alone or combined with alternate stationary discs, the granular matters being gradually moved over the discs by stationary or moving blades, and being subjected to a current of heated air or gases passing over or through them in a direction opposite to that of their own progressive movement, or only stationary discs may be used with revolving blades. The heated current may be induced or assisted by a jet of steam.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 4.—N° 380.

COOK, Thomas.—(*Provisional protection only.*)—" Improvements in raising or forcing liquids from casks, " barrels, and other vessels or receptacles."

According to this invention pumps are dispensed with, and the contents of casks, or tanks, or other vessels are forced or raised therefrom by means of a flexible or elastic bag inserted in the bung hole and connected by a tube to a reservoir of compressed air, or of water under compression.

By these means the liquid is expelled by the expansion of the flexible bag.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 4.—N° 381.

STERRY, Arthur Charles.—(*Provisional protection only.*)—" Improvements in and applicable to " locomotive engines and carriages on railways."

The object of the invention is to prevent the unevenness and irregularity of motion of engines and carriages on the rails caused by the dip of the wheels in passing over breaks, indentations, or weak places in the line.

And the invention consists in adapting and applying a rigid bar on each side of the engine or carriage, and arranging the wheels so that while one wheel is passing over a break or indentation the other wheels on the same side may be on a solid part of the line, and may, in conjunction with the rigid bar, support the said wheel and prevent its dipping as usual.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 4.—N° 382.

SCOTT, Thomas, and MOWAT, Robert.—" Improvements in lamps for burning paraffin and other " hydrocarbon oils."

The feature of novelty which constitutes this invention is the employment of a glass holder or gallery with holes formed in it through which air is admitted to the interior of the chimney and from thence to the interior of the burner.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 4.—N° 383.

GRAHAM, Peter.—" Improvements in corks or stoppers for closing bottles and jars."

According to this Provisional Specification capsules are fixed on the top of a cork; they cover the mouth of the bottle or vessel.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 4.—N° 384.

WEBSTER, John.—" An improvement in the means of preventing incrustation in steam boilers & other " vessels."

This invention consists in bringing into contact with the water of the boiler a surface of fibrous material, such as tow, hemp, flax, jute, " pulped or otherwise," or other suitable substance for collecting the incrustating matter of the water, and removing the said fibrous material or other substances when charged with incrustating matter without derangement of the boiler, while generating steam or not. Among the numerous methods of carrying out this invention I fix in the boiler a perforated vessel carried below " water mark," into which I place a second perforated vessel, " moveable," into which I place the fibrous and other suitable material for collecting the incrustating matter, and by means of mechanical appliances I can remove the second vessel at my option, and therewith the incrustating matter; and by the same means renew fresh fibrous or other material in a continuous manner without derangement of boiler or suspending the generation of steam.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 4.—N° 385.

NEWTON, William Edward.—(*A communication from Thomas Peter Akers.*)—(*Provisional protection only.*)—" Improvements applicable to steam boilers for automatically sounding an alarm at the extremes of " high and low water, also for automatically sounding an alarm when the steam in the boilers exceeds a given " pressure."

Within the water and steam space of a steam boiler pendulous solids or weights of greater specific gravity than water are suspended from the extremities of a lever so that when the water in the boiler is at its mean height these weights shall be counterpoised by the buoyancy of the water, and when the water is either too high or too low one of the weights shall thereby operate upon a valve communicating with an alarm or whistle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 4.—N° 386.

PETTMAN, John.—(*Provisional protection only.*)—" Improvements in percussion fuses suitable for " projectiles to be fired from rifled ordnance."

This Provisional Specification describes the making a percussion fuse of a conical screw plug to enter the fuse hole of a shell or projectile; within the plug is a piston held by metal pins which are shorn off on the projectile being fired from the gun, and the projectile then passes to the rear end of its cavity, striking against a leaden cup which prevents it rebounding. The piston has a ring groove at its end to contain the fulminating material. Other improvements are also described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 5.—N° 387.

WALKER, Thomas West.—" Improvements in the manufacture of bricks, tiles, slabs, and other like " articles, and in the materials and machinery or apparatus employed therein."

This invention relates to a peculiar construction, arrangement, and combination of machinery or apparatus for moulding and compressing plain or ornamental bricks, tiles, slabs, and other like articles composed of plastic or of semi-dried material; also to a peculiar composition or compound from which tiles, slabs, and other similar articles may be manufactured. Also to an improved manufacture of ornamental tile. The improved moulding and compressing machine consists of a fixed bed plate having a smooth surface, upon which the material to be moulded or compressed is placed between two upright plates or wipers which travel over the surface of the bed plate; the front wiper moves to and fro in contact with the surface of the bed plate, and has no vertical movement, whilst the back plate or wiper has only a horizontal motion in contact with the surface of the bed plate, but also a vertical movement in order that it may be elevated slightly above the bed plate. Both plates or wipers are provided with means for lubricating them and facilitating their passage over the bed plate. After the material has been placed on the bed plate, the back wiper is caused to descend by its own gravity, it being attached to a chain passing over a pulley on each side, such chains being connected to a pair of horizontal sliding rods, which rods on being moved inwards allow the wiper to descend, and when drawn outwards accomplish the elevation of the said wiper. Beneath these two sliding rods are two other rods, which are so connected with the upper pair that they will commence to move inwards after the upper rods have made a portion of their traverse. To the inner ends of the lower rods is connected the front wiper, and consequently it follows that by the time the back wiper has descended on to the bed plate the front wiper commences to move towards the back of the machine in company with the back wiper. The object of the horizontal movement of the two wipers is twofold, namely, to bring the fresh material in a proper position under a vertical plunger hereinafter referred to, which is accomplished by the front wiper, and to remove the moulded article out of the way, which is effected by the back wiper. This latter wiper is elevated in order that it may pass clear over the fresh material on the bed plate in its return movement, it being elevated again before the wipers commence to return. The to and fro horizontal motion of the wipers is produced by the aid of a counter-weight in conjunction with a chain connected to a cross-bar on the outer ends of the upper pair of sliding-rods, such chain passing over a wheel or segment on a rocking shaft siduate underneath the bed plate. This shaft is actuated by a pair of vertical sliding rods connected to the cross head of the plunger such rods acting upon short lever arms keyed on to each end of the rocking shaft. The lower ends of the two vertical rods each carry a hinged catch so arranged as to act upon the lever arms only whilst the cross-head and plunger are rising. The plunger works in connection with a moulding box or frame, the latter being made to descend, and enclose the clay before the plunger comes into action, as described in the Specification of a Patent granted to me on the Seventeenth day of December, One thousand eight hundred and sixty, N° 3101. In order that the plunger may fit the frame perfectly air tight during its descent, and be slack or free when rising, I so dispose the packing that the pressure or descent of the plunger itself shall cause it to expand and fit tightly inside the frame, but shall contract again when the plunger rises. In order to effect the instantaneous stoppage of the machine when required, I propose to combine with the strap shifter a break, which simultaneously with the shifting of the driving strap from the fast to the loose pully shall be applied to the periphery of a fly wheel on the driving shaft, which is bevilled for that purpose.

In order to allow of the escape of the superfluous clay or material I form what I call "spirt" holes either in the bed plate or in the frame, which holes are closed just before the final pressure is applied.

My improved composition or compound for the manufacture of plain or ornamental tiles and slabs consists of a mixture of burnt, ground, or pulverized clay or other suitable earthy matter with any of the well known "frits," and with starch or other suitable glutinous material, the whole being reduced to a plastic state by the addition of water thereto, and ground together or not as required.

I produce ornamental tiles by punching or stamping one or more openings through the tile, and filling in such opening or openings after the tile as been burnt with mosaic work or ornamental devices or patterns otherwise obtained.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 5.—N° 388.

McKELLEN, Robert Dunseith.—"Certain improvements in machinery or apparatus to be employed in "the manufacture of cotton and other balls."

The novelty and feature of the invention consists,—

First, in actuating the mechanism employed in the manufacture of cotton and other similar balls by means of a cam and intermediate gearing that will give an oscillatory motion to a number of flyers placed at an obtuse angle to the caps of the spindles upon which they deliver yarn and on which the ball is formed by self acting mechanism.

Secondly, in the placing of a ticket or label in the end of the ball during formation by means of suction obtained and caused by a fan or other equivalent; and,

Lastly, in simultaneously "doffing" the finished ball from the spindle caps and severing the end from the continuous thread, at which time also the end so severed from the finished ball is caught by a finger and secured under the last fold completing the ball.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 5.—N° 389.

TAYLOR, Samuel Gee.—"An improved mode of lubricating the spindles of machines for spinning and "doubling."

My invention consists in applying a flannel or other washer to each spindle; these washers rest on the lifting rail and are kept saturated with oil by means of tubes or grooves in a cover or in the lifting rail; these tubes reach from the outside of the rail or cover to the washers.

The attendant can thus lubricate the spindles without stopping the machine.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 5.—N° 390.

JONES, Robert John.—" Improvements in machinery for manufacturing clog soles, clog blocks, patten " boards, and similar articles, and cutting welts."

A variable accumulating lever is added at the end of the main lever of the shaping machine mentioned in Patent 416, 1865. After the inside and outside of the clog or other article are shaped they are cut on the edge by the side cutting machine, which has two pieces of side framing on which are fitted two slides carrying revolving cutters of the proper shape for cutting the edges of the block. This block is held by a lever which works on a centre several feet from the machine; or instead of the slides carrying the revolving cutters being screwed fast they may be made to move for the purpose of bevilling the edges of the soles when required.

The roughing hollower is a machine having grooves or other contrivances in which a slide works to and fro under a frame which rises and falls upon two pivots at the back. This frame carries a shaft and head with cutters to fit the foot, which are moved by pulleys running on suitable templates fixed to the slide that carries the sole.

The heeling and toeing machine has a frame similar to that of the side cutting machine with slides carrying cutters the shape of the heel and toe.

In the side cutting machine instead of using a horizontal head I use a vertical rotary head for carrying the cutters for forming the hollows to fit the foot, which is done by having templates of the shape required to work to.

In the machine for sinking the heels and cutting out the shank the head is fixed in a swing frame (balanced by weights or springs), and cutters are added on the heel side of the head to take off the piece where the heel iron is bent over. For finishing the hollow of the foot the cutters are placed diagonally.

Variable fences are used for varying the grip round the heel; and to facilitate the changing of the cutter heads when dull the boss of the machine turns on a horizontal centre, which boss carries a vertical centre in which the shaft works.

The bottoms may be shaped by the head being stationary and the sole being placed on a frame working on a centre. The sole coming in contact with the head receives the required shape. For cutting the welt a thin knife is fixed over a planed or turned surface, and rollers are used both for feeding the leather to the knife and for pulling it through.

A guage is used for determining the breadth of the said welt.

[Printed, 3*s*. 6*d*. Drawings.]

A.D. 1868, February 5.—N° 391.

ARDACHE, Florimond.—" Improvements in apparatus for winding flat cords, ropes, and bands."

The winding drum or wheel is mounted in suitable bearings, fixed supports attached to the requisite framework being placed on each side and independent thereof, and to which supports rollers are attached for the purpose of guiding the cords, ropes, or bands.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 5.—N° 392.

BOULTON, Matthew Piers Watt.—" Improvements in propulsion and in aerial locomotion and in " apparatus connected therewith, parts of which are applicable to projectiles and to boilers."

Applying jets of aeriform fluid so as to increase their efficiency as propelling agents for vessels or projectiles.

Supporting aerial vessels by the action of aeriform currents on surfaces, such currents being produced by power generated in the vessels.

Producing jets to be employed in the apparatus described.

Boilers for the generation of vapours or fluids for the purposes of aerial locomotion, some of the boilers described being applicable to general purposes.

Apparatus for giving stability and fixedness of course to aerial vessels.

[Printed, 1*s*. 2*d*. Drawing.]

A.D. 1868, February 5.—N° 393.

BUNNING, Henry, junior.—"Improvements in apparatus for burning combustible liquids in furnaces."

This Provisional Specification describes a receiver which is placed in the furnace; above the level of this receiver is a cistern to supply it with the liquid to be burnt by means of a pipe. The liquid is heated in the receiver, and issues from it in the form of vapour into the furnace through a pipe having perforations in it, stop cocks are used to regulate the supply of liquid to the receiver and of vapour to the furnace.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 5.—N° 394.

NEWTON, William Edward.—(*A communication from John Dodge Wilber, Mark Dodge Wilber, and Francis Kirby Stevens.*)—"Improvements in mowing and reaping machines."

The novelty of this invention consists in mounting the machine and gearing on a central shaft, and a novel arrangement of pawl and ratchet which puts the machine out of gear when pushed backwards.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 5.—N° 395.

NEWTON, William Edward.—(*A communication from Daniel McLean Somers and Walter Scott Atwood.*)—"Improvements in buttons and in the means for securing them to garments or other articles of wear or use."

Providing buttons with a hollow neck for compression around a suitable locking shaped stem.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 5.—N° 396.

MOORE, Henry, and HAMILTON, Joseph.—"Improvements in the construction of furniture expanders, and in machinery to be used in making the same, which machinery is also applicable to other manufactures."

This invention refers firstly to certain improvements in the expanders for furniture by forming them with a treble telescopic action on either side of the centre by means of screwed shafts and tubes working within each other.

The invention refers, secondly, to the arrangement of the slide rests of screw cutting lathes or machines in such manner that two cutters or tools are employed to cut in alternation, the one for the forward and the other for the backward motion of the blank, rod, or shaft under operation.

It also refers to the employment of cutting dies, instead of the cutters before named, which are held together, both cutting upon the article at the same time.

It further refers to the formation of the beds for such machines.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, February 5.—N° 397.

JONES, John Allcock.—"Improvements in the production of iron and steel."

This invention relates to certain improvements in the production of iron and of steel from cast or pig iron, and consists in melting cast iron in a reverberatory or other melting furnace, and after fusion agitating the same, and then having by preference lowered the damper of the furnace adding to the melted metal a flux, consisting of oxide of manganese, common salt, salammoniac, or any of them together with spiegel eisen, which may be continued until the mass thickens. After agitation the damper is raised and the ingredients and metal again rendered fluid so as to enable the separation of the cinders or slag from the iron to be effected. The cinder is then tapped and is run off. The metal is then removed from the furnace and may be placed either on the hearth of a smelting furnace, such, for example, as a reverberatory or gas furnace, or it may be placed in crucibles and be melted into steel.

The puddling furnace I employ may be similar to those at present in use, or it may be specially constructed so as to produce a larger quantity of material, or it may be constructed of such other form as may be well adapted for the successful carrying out of my improved process.

The sides and bridge of the furnace, however constructed, are fettled with oxide or peroxide of iron, which assists in the cleansing of the iron from certain impurities, such, for example, as sulphur and phosphorus, which impurities are injurious to the quality of iron or steel to be produced. Slag is placed among the pig or cast iron, by preference that known as hammer slag, in order when melted to form a bath in which the iron may be washed. This is not absolutely necessary, but it very materially assists in effecting the purification of the iron. The pig or cast iron, together with the slag, is placed in a furnace melted, and after having been well puddled, agitated, or stirred, the damper of the furnace is closed, and a mixture composed of the following ingredients is added to the molten metal, viz., oxide of manganese, common salt, salammoniac, speigel eisen, and ground charcoal.

The proportions which I have found to give good results are to a charge of about 4¼ cwts. of pig or cast iron about—

1½ lbs. of manganese.
4 lbs. of common salt.
¼ lb. of salammoniac.
¼ cwt. of spiegel eisen.
½ lb. of charcoal.

These proportions may be varied, and any of the ingredients may be omitted if desired. The molten iron, together with the flux or fluxes which have been added thereto, is now agitated, stirred, or again puddled, after which operation the damper may be raised and more heat applied until the cinder becomes more liquid, and the grains of crude iron aggregate and settle to the bottom of the furnace. The cinder may then be tapped off the iron and the iron be removed from the furnace, and may be plunged into hot water. It may not be absolutely necessary to flux all kinds of pig or cast iron as described, nor to fettle with oxides or peroxides of iron, but such a flux or fluxes as I have described, together with oxides of iron, tend to purify the iron or metal and to render it more suitable for subsequent melting into steel. The iron or metal resulting as before described is removed to the hearth of an ordinary reverberatory furnace, or to the hearth of a Siemens' gas furnace, or to any other convenient melting furnace for the purpose of being melted, or it may be melted in a crucible. The hearth of the furnace may be hollowed out to any convenient shape so as to receive the iron or metal. The iron or metal being placed upon the hearth of the furnace, a high temperature is applied, such as is usual for effecting the melting of iron into steel, and in order to protect the iron from oxidation cinder is also placed in the furnace. This cinder may be a silicated oxide of iron, or flux composed of sand, lime, and salt melted together may be employed, or ordinary blast furnace slag may be used; either or all of these together may be used. These will act as a protective covering to the iron or steel. When the iron is melted the quality and the temper of the product can be ascertained by taking out a portion from time to time and testing it by smithing or otherwise. If it be found to be too soft, spiegel eisen or other cast iron can be added in order to harden it; if too hard, broken fragments of a puddled ball may be added, or scrap or wrought iron in small pieces may be added. A flux may also be used in the melting chamber, such as oxide of manganese, lime, and salt, and alloys may, if necessary, be added, such as titanium or wolfram. The melted steel may be gently stirred about in order to mix it thoroughly, and when ready may be tapped out direct into ingots or into an intermediate receptacle and thence into ingots. The ingot moulds may be on bogies, and one after the other can be run up to the tapping place. In the intervals a plug of clay or iron can be put into the tapping hole. The hereinbefore described process is adapted for the treatment of various qualities of cast iron, but more particularly to that class which contains elements such as sulphur or phosphorus, or both, and unless their entire or partial removal be effected the quality of the steel produced will be materially injured. The roof of the reverberatory furnace may be so constructed as to allow an opening whereby the furnace may be charged. A cover of fire brick or other suitable material may be used to close the opening when necessary. This opening will be over the melting chamber. The material to be melted may be first heated in any convenient place, by preference in a chamber connected with the furnace in which the steel is melted, and thence removed to the melting hearth or crucible. The hearth may be lined with a material suitable for withstanding the high temperature, such as best fire brick or kneaded fire clay mixed with a little coke dust. The bottom of the hearth may be of cast iron, and atmospheric air may be allowed to have access to the plates in order to prevent the lining of the hearth being too injuriously affected by the heat.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 5.—Nº 398.

HAY, JOHN.—"A new method of roughing horses and of constructing horse-shoes."

The feature of novelty which constitutes this invention is the construction of horse shoes in a manner so as to obviate the necessity of removing the shoes for the ordinary purpose of roughing or raising the heels of such shoes, certain parts being capable of removal and replacement by screwing.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 6.—Nº 399.

GUTTRIDGE, CHARLES WILLIAM.—(*Provisional protection only*.)—"An improved apparatus for cutting "soap."

This apparatus consists of a piece of angle iron fixed to a counter or other suitable support; upon this angle iron are fixed two plates of metal or other suitable material divided almost through their centre and placed at a right angle, in which the soap rests. A half elliptical piece of metal, with a division in same, is made fast to the said plates. A piece of wire passes through the divisions in the plates and the half elliptical piece of metal, one end being fixed to the angle iron, the other end being provided with a handle.

A longitudinal opening is made in one of the plates for receiving a slide piece, which may be fixed by a screw and small plate to regulate the size of the piece of soap to be cut by the aforesaid wire.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 6.—N° 400.

ROPER, George.—(*A communication from Alfred Roper.*)—(*Provisional protection only.*)—" An improved " screw propeller."

The novelty consists in mounting two or more sets of screw blades on the same shaft, one set or sets of such blades being fixed before and the other behind the rudder and stern post.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 6.—N° 401.

BORGEN, Adolph Emil. —(*A communication from Ole Christian Green.*) — "The preparation of " 'phosphor free' matches made either with or without paraffin, stearine, or wax, without the use of " phospor, and without requiring any prepared surface in order to obtain an instant light."

The "phosphor free" match is intended to be made without the aid of "phosphor," and will not require any prepared surface in order to obtain an instant light.

It is dipped in the usual way in a preparation of the following ingredients :—

15 to 20	parts	plumbum hypersulphurosum or under sulphuric acidulated lead.
8 to 10	,,	chlorate of potash.
1 to 2	,,	oxide of manganese or manganhyper oxid.
1 to $1\frac{1}{2}$	,,	roeling stone from Bornholm, Denmark.
$\frac{1}{16}$ to $\frac{1}{18}$	,,	blood stone.
1 to 2	,,	lime dextrin or similar binding matter.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 6.—N° 402.

RANKINE, William John Macquorn, and GALE, James Morris.—(*Provisional protection only.*)—" Improvements in condensing steam and in apparatus therefor."

This invention is applicable to cases in which steam has to be condensed and the supply of water of a degree of purity suitable for feeding the boiler is either not sufficiently great to enable it to be used for the complete condensation of the steam or too expensive to be so used whilst the supply of water of less purity is sufficient. The invention is applicable also where it is desired to condense two different portions of the steam under two different pressures; for example, where the water obtained by condensation at a comparatively high pressure and temperature is to be used for feeding the boiler, and the remainder of the steam is to be condensed at a low pressure and temperature, and this application may be made even when the whole supply of water is equally pure.

Two condensers are employed, being either two separate vessels or one vessel divided into two parts, and both those condensers are spray condensers, that is to say, the steam is condensed by injecting cold water amidst it in the state of spray.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 6.—N° 403.

BRINDLE, Henry.—(*Provisional protection only.*)—" Certain improvements in 'shuttles,' to be employed " in looms for weaving."

The novelty and feature consists in applying a peculiarly formed curved wire to the shuttle, which being depressed by the warp when the weft " floats " severs the weft and stops the loom.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 6.—N° 404.

HONEYMAN, John, junior. —(*Provisional protection only.*) — " Improvements in arrangements and " apparatus for trapping and ventilating in connection with drain or other pipes."

This invention relates to an improved pipe trap and to improved arrangements in connection therewith for more effectually preventing the passage of foul air from drains or sewers into houses; for cleansing the trap; and for ventilating both sides of it; whilst convenient arrangements may also be combined therewith for ventilating houses. The improved pipe trap may also be used in chemical or other manufacturing operations wherein liquids have to be passed through pipes through which the egress of gas has to be prevented.

The improved pipe trap may be made in earthenware or metal. It is formed with four openings, two of which, for the connection of the pipes leading to and from it, are at opposite ends, and are directed horizontally. The two other openings are in the top, one on each side of the tongue or dipping part, whilst the bottom is hollowed out with an easy curvature to form the usual recess to retain water, the contact of which with the tongue forms the seal or trap.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 6.—N° 405.

NEWTON, William Edward.—(*A communication from David M. Greene.*)—" Improvements in steam " gauges."

This invention consists in a novel construction of steam gauge for indicating the pressure of steam by means of the temperature or degree of heat of the steam.

[Printed, 6*d.* Drawing.]

A.D. 1868, Februray 6.—N° 406.

COLE, John Cyrus.—(*Provisional protection only.*)—" Improvements in drill braces, applicable also to " spanners and other like implements."

This invention refers to the combination of a metal strap and a cylinder, with the handle portion of a drill brace, and either with or without springs, in such manner as to obtain a flexible and a rigid action to the parts in alternation as also a rotary movement to the tool, by the upward or downward movement of the handle.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 6.—N° 407.

WHITE, John Tahourdin.—" Improvements in fire-lighters."

This invention relates to a peculiar mode of combining or arranging fire wood with a view to its more rapid and perfect combustion, and consists essentially in so combining or arranging any convenient number of separate pieces of fire wood as that the whole shall form a hollow cone or pyramid to be used with the apex upwards. In practise, I propose to construct my improved fire lighters by connecting together a number of pieces of fire wood of a length of say 6 inches by 1¼ inches in breadth, and ¼ inch in thickness (which dimensions may however be varied as desired) at their upper ends by leaving a hole drilled through each piece, and passing a wooden pin or holder through the series. The several pieces are then opened out in equal numbers or nearly so on each side to form the sides of the cone or pyramid, and are maintained in their respective places by a cross bar at each side at the base secured by other pins passing through the ends of such cross bars, and through the lower ends of the several pieces of fire wood forming the sides of the cone or pyramid. The whole or a part may or may not be dipped in resin or other imflammable material.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 6.—N° 408.

BRADBURY, George Francis, and CHADWICK, Thomas.—(*A communication from Thomas Antoney Macaulay.*)—" Improvements in or applicable to certain sewing machines."

This invention consists in using a ring hook in place of the ordinary spool in the Wheeler and Wilson class of sewing machines, so that by this means the single thread chain stitch may be produced in those machines.

[Printed, 6*d.* Drawing.]

A.D. 1868, February 6.—N° 409.

OAKESHOTT, Benjamin Morris.—(*Provisional protection only.*)—"An improved hot air, simple or " medicated vapour bath."

The combination in one apparatus for the application of hot air, simple or medicated vapour.

The base of the apparatus forming a box in which all the minor parts and projecting arm are enclosed when not in use.

The sliding lamp, a portion of which forms the door of the base.

The compensating slide to counterbalance the weight of projecting arm.

The loose diaphragm.

The division of the apparatus into three portions for compactness and portability.

The construction of the cradle, ensuring strength with portability.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 6.—N° 410.

BRAKELL, Christopher.—" Improvements in apparatus for measuring fluids."

According to this Provisional Specification a flexible tube is passed around a cylinder; the fluid is admitted at one end of it, and the other end is open.

Two rollers carried on radial arms bear on the flexible tube and collapse it.

The fluid in the pipe striving to flow on pushes the rollers along the pipe and gives motion to the arms which carry the rollers and their axis is thus rotated.

A counter is connected with the axis.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 6.—N° 411.

TONGUE, William.—" Improvements in machinery for straightening and preparing fibrous materials for " combing or spinning."

In the Specification of an invention for which a Patent has been granted to the inventor, bearing date the 22nd of August 1866, N° 2155, an arrangement of machinery is described for preparing fibrous materials by which one half of a series of gills or heckles is withdrawn, moved towards the feed rollers or instruments, and then replaced after which the whole series is moved from the feed rollers or instruments so as to comb out or prepare the material presented by such feeding instruments; the other half of the series of gills or heckles is then withdrawn and replaced in a similar manner to the first half of the series and by the repetition of these movements the material is straightened, prepared, and delivered from the machine, and this Provisional Specification describes improvements which relate to certain changes whereby the construction of the machine is simplified.

[Printed, 3*s*. 4*d*. Drawings.]

A.D. 1868, February 6.—N° 412.

MASEY, Philip Edward.—(*Provisional protection only*.)—" Improvements in machinery or apparatus " for obtaining aerial locomotion, part of such improvements being applicable to rotary steam engines and " boilers for other purposes."

This Provisional Specification relates to improvements in machinery or apparatus for obtaining aerial locomotion by means of a series of rotating vanes or blades mounted on axes (above the machine) actuated by a rotary steam engine and boiler of improved construction, such rotary engine and boiler being applicable for obtaining and transmitting motive power for other purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 6.—N° 413.

HART, Herbert William. — (*Provisional protection only*.) — " Improvements in the manufacture of " safety envelopes."

The margin of the adhesive part of the envelope is perforated so as render it difficult to open it without damaging the paper.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 7.—N° 414.

LONGBOTTOM, Christopher, and LONGBOTTOM, Charles Hindle. — (*Provisional protection only*.)—" Certain improvements in or applicable to machinery for spinning, twisting, & winding fibrous " substances and to looms for weaving."

The novelty consists in,—

The employment or application of enamelled metal for the fly boards and rails, and for the guide eyes in machinery for spinning, twisting, and winding, and for the slay-boards and shuttle-eyes in looms for weaving.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 7.—N° 415.

O'DONNELL, James, and ARKILL, Thomas. — (*Provisional protection only*.) — " Improvements in " apparatus for raising and lowering venetian and other blinds."

This Provisional Specification describes improvements in apparatus for raising and lowering Venetian and other blinds, whereby they can be more readily raised and lowered or retained in any desired position than heretofore.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 7.—N° 416.

READ, Samuel.—" Improvements in finishing paper and textile fabrics, and in the machinery or apparatus " connected therewith."

The feature of novelty which constitutes this invention is the arrangement of a system of rollers whereby a glaze or finish can be imparted to both sides of the paper or fabric by one continuous operation.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, February 7.—N° 417.

CASH, John, and **CASH**, Joseph.—" Improved machinery for the manufacture of looped and textile " fabrics, and in the fabrics produced thereon."

The novelty of this invention consists in a new combination of the several parts constituting the machine, and also in the employment of a flat thread or other material instead of a round one, and in the wale of the fabrics made therefrom lying at right angles to the length of the work produced.

[Printed, Drawing.]

A.D. 1868, February 7.—N° 418.

IBBOTSON, Alfred Buckingham.—(*A communication from Thomas Sexton Sarney.*)—" Improved steel " spring railway fastenings."

The novelty in this case consists in forming railway chairs, keys, and fish plates of plates of steel of equal or variable thicknesses bent and curved so as to form spring bearings, keys, and joint plates.

[Printed, Drawing.]

A.D. 1868, February 7.—N° 419.

HANN, William.—" Improvements in safety lamps."

This Provisional Specification describes forming safety lamps with numerous tubes of small diameter or with concentric cylinders with narrow spaces between them to carry off the products of combustion from the flame of the lamp.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 7.—N° 420.

TUCKER, George.—(*Provisional protection only.*)—" Improvements in the manufacture of rain water pipes " and certain other articles in cast iron."

This invention consists in certain improvements in the manufacture of such cast iron goods as sash weights, rain-water pipes, and gutters and their connections, furnace pans, and hotwater pipes and their connections. These improvements consist in casting the requisite articles in chills made of the required shape, whereby great economy in the manufacture of large quantities is obtained, with a harder and more durable surface.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 7.—N° 421.

DRAKE, Walter.—(*Provisional protection only.*)—" Improvements in machinery or apparatus employed " in the cutting of wood laths, and for other similar purposes."

In the machine are two revolving centres carried on shafts. The wood is received and held fast between these centres, for which purpose one of the shafts is made moveable. Two rollers are supported in bearings. The lower roller is plain and the upper one is provided with radiating knives on its periphery. These rollers are revolving, and are pressed towards the wood to be cut. One of the centre shafts is in gear with a cam shaft; the cams on which press a knife and guide plate towards the centre of the wood to be cut.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 7.—N° 422.

LAKE, William Robert.—(*A communication from Charles Herrman Eiffler.*)—" Improvements in locks."

The object of this invention is to construct a door lock whose outer knob can be thrown in or out of gear with the latch by the action of a cam, lever-stop, and tumblers enclosed in the knob. The tumblers are operated by a key inserted through a hole in the side of the knob in such a manner that when the knob is thrown out of gear with the latch the door cannot be opened from the outside, and the knob can only be thrown in gear with the latch by a person provided with the proper key. The same mechanism is also applied to padlocks or locks of any other description, where the position of the tumblers is regulated by the combined action of a lever-stop and a key inserted through the side of the case, and where the tumblers act on the shackle of the padlock or on the bolt of a common lock. A lock is thus obtained which is very simple in its construction, and difficult, if not impossible, to pick.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 8.—N° 423.

WILSON, James Buck.—" Improvements in compressing, forging, and rolling steel and other metals, and " in machinery for such purposes."

My invention consists in gradually compressing, forging, and rolling steel or other ingots by means of pressers, hammers, tups, and rolls acting independently or in combination, or in alternate succession, thereby drawing out the ingot into a bar or rod of any suitable section, and economising heat, power, labour, time, and material.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 8.—N° 424.

HARFORD, George.—(*Provisional protection only*.)—" Improvements in scaffolding, and apparatus to be " used for building and other similar purposes."

The formation all around the object to be constructed of a double frame consisting of sole-plates at right angles to or parallel with and passing through the thickness of the wall, into which sole-plates uprights are fastened both outside and inside the wall. The uprights may be any length, but I propose that they be equal in length to the height of one storey of the house, the tops of the uprights being kept in their places by cross-bars.

On the cross-bars is placed a rack and pinion or screws, so that when the building is completed to the height of the uprights the entire framing may be raised from off the sole-plates to the height of the next storey, and the sole-plates may be withdrawn and placed upon and across the completed portion of the building, and the framing rested upon them, and so on.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 425.

McKNIGHT, Alexander.—(*Provisional protection only*.)—" A new or improved powder or composition " for cleaning and polishing articles made of steel, iron, copper, brass, or other metals."

The following is the composition in parts, by weight, of this new or improved powder or composition:

Flour emery	10 parts.
Superfine emery	1½ parts.
Purple crocus	1½ parts.
Staffordshire iron ore or other similar ore calcined and finely powdered	1½ parts.
The same calcined iron ore less finely powdered	1½ parts.
Vegetable black	½ of a part.

These powders are intimately mixed, and about an ounce of common oil is added to each pound of the powder to destroy its dusty character.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 426.

WALKER, Thomas.—" Improvements in the construction of sewers and drain pipes or tubes."

The object of the improvements is to prevent the effluvia from main drains rising by subsidiary drains into the street or ways, and in some cases into the surrounding dwellings.

For this purpose inlets to the main drains from the subsidiary drains are at the lower portions thereof or below the level of the sewage matter in such main drains, so as to seal or trap the subsidiary drains by the sewage matter in the main drains.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 8.—N° 427.

ROTHWELL, Peter.—" An improved regulating valve for the delivery of specific quantities of gas, water " or other fluids."

This invention is intended to be used in connection with an ordinary tap or valve and is for the purpose of regulating the specific quantity of gas, water, or other fluid which passes through the tap or valve, even though the latter should always be open to its fullest extent.

The improved regulating valve consists mainly of a conical plug fitted in a conical seat in a chamber which is bored throughout and fitted between the delivery pipe and the ordinary tap, or in some cases beyond the latter.

The conical seat fits closely to the plug, excepting at one place where a recess is cut in the former, in such a manner and of such a form that when the openings in the plug are opposite to the recess the full amount of gas or other fluid can pass from one opening in the plug direct to the other, but when the latter is slightly turned the amount passing through is diminished accordingly.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 8.—N° 428.

PHILIPP, Adolph. —(*Provisional protection only.*)— "An improved apparatus to be employed as a "combined cigar, ash, and light holder, and 'whist' or other game marker."

This invention is designed to supply an apparatus to be used for the convenience of card players and smokers, in which are combined the receptacles and articles required by them.

The invention consists of a combination of a cigar, ash, and light holder, together with a whist and cribbage marker, card box, and counter drawer, either with or without the addition of an inkstand.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 429.

NIXON, John.—"Improvements in the manufacture of braces."

This Provisional Specification describes an improved method of manufacturing braces for suspending articles of dress. As is well known braces are so formed by various means as to be narrower at the ends than at the part which rests upon the person, and this invention consists in so forming a brace from warp and weft by the well known process of weaving.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 8.—N° 430.

HOWARD, James, and BOUSFIELD, Edward Tenney. — "Improvements in the construction of "steam boilers."

Arranging the "sections" of tubes longitudinally in the furnace instead of transversely, and giving a clearance in the lower longitudinal coupling pipes for the insertion of scrapers. Expanding the diameter of the vertical tubes near the water line to diminish the variation in height of the water level. Also extending the boiler into the flue for heating the feed water.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, February 8.—N° 431.

RICHARDSON, William.—"Improvements in machinery or apparatus for the manufacture of combs to "be used in carding engines, as doffer or other such combs, or in wool burring, cotton cleaning, or other "machines used in the treatment of fibrous materials in which combs of the like character are required."

This invention relates to the manufacture of combs which are constructed after the manner of doffer combs used in carding engines and other machines used in the manufacture of fibrous materials, and consists in forming the requisite serrations by the action of a rotatory cutting tool.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 8.—N° 432.

COWAN, William.—(*Provisional protection only.*)—" Improvements in the construction of the cases of "gas meters."

The feature of novelty which constitutes this invention is the mode of constructing the cases of gas meters so that less labour is required in fitting the parts of such cases together and at the same time the liability to leakage of the joints of the case is diminished.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 433.

KEY, John, and HOSKINS, Ebenezer.—"Certain improvements in metallic bedsteads."

The novelty of this invention consists in so constructing the foot part of metallic bedsteads that the foot rail may be not only removed and applied at pleasure, but also so constructed that it may extend down below the foot part of the bedstead, and be made of an oval, elliptical, or other curvilinear form vertically or horizontally.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 8.—N° 434.

WOODWARD, HENRY.—(*Provisional protection only.*)—" An improved knife cleaner."

The novelty of this invention consists in the use of any suitable number of vertical pieces of wood covered with leather or otherwise prepared on the cleaning sides, held positively together at the lower ends, and with an elastic connection at the top ends, by which means they will adapt themselves to any form of knife desired to be cleaned, an arrangement being formed for holding and supplying the scouring material at the top and receiving it at the bottom.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 435.

BROOKE, WILLIAM, and EDMONDSON, RICHARD.—(*Provisional protection only.*)—" Improvements in " healds for weaving."

These improvements consist in the application of " catgut " for making healds, in placing metallic eyelets in such healds, in combining catgut and pieces of metal having holes in them arranged so that the warp threads will pass through in a line nearly parallel to the flat side of the metal, and in giving elasticity in each of these improved modes of making healds by connecting them with the rods by means of india rubber or other suitable elastic material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 436.

NICHOLSON, JOSEPH ALFRED.—(*Complete Specification, but no Letters Patent.*)—" Improvements in " water closets, commodes, chamber and toilet utensils, and other articles in earthenware or glass, and in the " mode or means of securing stoppers, corks, and other moveable parts or fittings therein or thereto, also in " protecting the bearing or supporting surfaces thereof."

The novely in this case consists,—

Firstly, of a skeleton frame, the parts of which are made to separate from each other, and to pack together in a small space, and of a rocking seat, and folding curtain or case for concealing the pan from view. Secondly, a valve and regulator in which a certain quantity of air or water is made to pass through a small and adjustable aperture to retard the closing of the service valve. Thirdly, chamber closets or commodes, vases, ewers, and the like, having contracted necks with a vertical line of pour. Fourthly, in forming chamber utensils with a partially closed web or division or tortuous channel between receiver and container for concealing the contents of the latter from view. Fifthly, of rising and falling and rotating toilet ware. Lastly, in forming jars, pots, and other articles by forcing clay through dies.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 8.—N° 437.

BILLUPS, JONATHAN EDWIN.—(*Provisional protection only.*)—" Improvements in separating powders of " sulphates of barytes of various degrees of fineness, thus obtaining an exceedingly fine powder, and in the " separating apparatus adopted for the same."

This invention consists in blowing the mineral in coarse powder, (after it has passed through the processes of washing, crushing, and grinding,) through a separating chamber or appartus, so that powders of different degrees of fineness may pass each into a different compartment or bin and become separated. Ultimately an exceedingly fine powder is obtained.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 438.

SUGG, WILLIAM THOMAS.—" Improvements in valves."

This invention relates to improvements upon valves for which I obtained Letters Patent No. 58, 1867, and consists in the application of a hollow or solid hemispherical or other suitably shaped piece of india rubber or other material, so arranged with regard to its seat, which may be of metal, india rubber, or other suitable substance, as to act as a valve for many purposes, but is more especially designed to facilitate the supply of gas to railway carriages.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 8.—N° 439.

MARSTON, William Beale.—"Improvements in lamps and apparatus for lighting railway carriages."

According to this Provisional Specification railway lamps are constructed of a casing enclosed at the bottom by a glass and at the top by a reflector having a chimney through it. Through the casing of the lamp there is passed a tube containing a wick; this tube is surrounded by an air tube terminating within the casing of the lamp in front of the burner. Air entering through this tube impinges on the flame, causing complete combustion.

The oil reservoir is at a distance from the lamp, and the oil is conveyed by troughs or pipes filled with absorbent material.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 8.—N° 440.

SZERELMEY, Nicholas Charles.—"Improvements in rendering paper fabrics and other articles "waterproof."

According to this Provisional Specification the following compositions are used for waterproofing fabrics: glue, gelatine, or size and gum arabic melted in water.

Soap and alum melted in water.

These two liquids are mixed together and form composition No. 1.

Benzole, paraffin oil, with rosin melted in it; this is composition No. 2.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 441.

SZERELMEY, Nicholas Charles.—"Improvements in preserving wood."

This Provisional Specification describes the preserving wood by the use of the following compositions:—Potassa and lime dissolved in water, mixed with dilute sulphuric acid. Petroleum, asphaltum, and lime boiled together, and afterwards mixed with sulphuric acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 8.—N° 442.

LAKE, William Robert.—(*A communication from George W. McGill.*)—"Improvements in split spikes."

The nature of this invention consists in making a spike with prongs of unequal length and size, the shorter and smaller prong or prongs being so beveled at the point that on being driven into the wood they will diverge and separate from the main prong or stem, and will keep the said spike from becoming loose or drawing out.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 8.—N° 443.

LAKE, William Robert.—(*A communication from Martin Henry Dooly.*)—"Improvements in railway "switches, and in adjusting and signalling devices for the same."

The nature of my invention consists chiefly in improved means for operating the points of a railway to switch a train from the main line to another line, or vice versa. The adjustable ends or points of the rails at each end of the switch are connected by rods or links to cranks upon a shaft, which is arranged parallel with and at one side of the railway. The crossing rails leading from the main line to the side line are fixed to the sleepers in the proper position in relation to the rails of the main line. The ends or points of the adjustable rails are so arranged that each of the said ends joins the end of its corresponding fixed rail on a different sleeper. The adjustable rails are tied together by cross bars, and are adjusted in line with either the main line or crossing rails at each end of the switch by one movement of the shaft. Signal discs are connected to the points to indicate the position of the same to an approaching train.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 10.—N° 444.

ADAMS, William Bridges.—"Improvements in heating and welding metals in various forms, applicable "to forts, vessels, buildings, and other structures and uses."

My invention consists in welding separate portions of metal together by surrounding the parts to be united with fire clay, ganister, bricks, or other refractory material, so as to confine the heat to the actual surfaces to be joined and prevent the burning away of the metal. In the use of gaseous fuel by preference from petroleum or similar liquid or fluid substances in combination with air under pressure made to flow continuously as a gas and air blast into the hollow space forming the joint. In preparing the joints for welding by planing the surfaces to a smooth and true fit, and placing them either in close contact or out of contact, union being ensured either by pressure, rolling between rolls, or otherwise after the required heat is attained and hardening the surfaces when desirable.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 10.—N° 445.

BURGOYNE, William.—(*Provisional protection only*.)—" Improvements in the construction of letter " and invoice holders and sorters."

The novel features of this invention are,—

1stly. The construction of a case provided with sliding pieces or slips of wood or other material, each pair of pieces or slips being provided with a bag or pocket to receive letters or other documents.

2ndly. The use of springs to keep each series of bags or pockets closed, and which permit ready access to any compartment under any letter or figure required.

3rdly. The great saving of space, material, and cost by substituting bags or pockets in lieu of drawers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 10.—N° 446.

LAKE, William Robert.—(*A communication from Gardner E. Throop*.)—" An improved machine for " scouring and cleaning grain."

The object of the said invention is to furnish an efficient machine for separating impurities from grain. The said machine is provided with a thin metallic corrugated scouring case perforated with small holes, which form a number of cutting edges inside the said case. The grain is introduced through an aperture in the top of the latter, and is thrown by the action of revolving wings fixed on a central shaft against these cutting edges and thereby effectually cleaned. The said case is made in two parts, which are clamped together in such a manner that the case can be removed without disturbing the other parts of the machine. The separator has an up and down channel, and the air is forced by a fan through the grain as the latter falls through the down channel into a suitable receptacle. The fan is fixed on the central shaft below the scourer, and is enclosed in an adjustable case which carries the delivery spout, and can be turned round with the same to allow the machine to work in any desired position.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 10.—N° 447.

BARNES, Frederic, and **HANCOCK**, David.—(*Provisional protection only*.)—" A new or improved " method of and apparatus for working and communicating motion to signals on railways."

According to this invention the rails themselves are employed as a medium whereby the signals are worked. It is accomplished by uniting each rail to a battery and completing the circuit by the passage of a carriage over the line; this done, a magnet places the signal at danger, where it continues until the circuit is again broken, and this is effected by dividing the rails from one another at any desired distance from the signal post; as soon as the circuit is broken the signal goes to clear or caution.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 10.—N° 448.

JESSOP, George, and **SENIOR**, Ben.—(*Provisional protection only*.)—" Improvements in machinery " for preparing wool and other fibrous substances for spinning, commonly known as the 'condenser " carder.' "

The novelty consists in—

The application of a roller of india rubber or other elastic material betwixt each ring of cards supported upon or by the shaft thereof and in contact with the card surface of the doffer.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 10.—N° 449.

BROOMAN, Clinton Edgcumbe.—(*A communication from Nicolas Jourdeuil*.)—(*Provisional protection only*.)—" Improvements in combined pen and ink holders or fountain penholders."

The features are, 1, a tubular body having an upper enlargement to form an ink reservoir. 2, the watertight closing of the neck of the reservoir by a stopper of cork, caoutchouc, &c., held by a pin, or the closing by a flanged piston. 3, a caoutchouc ejector at the lower part in the form of an elephant's trunk or other suitable form to produce a continuous or an intermittent flow of the ink to the pen.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 10.—N° 450.

CLARK, ALEXANDER MELVILLE.—(*A communication from Pierre Jules Jacob Noël.*)—" Improvements in " breech loading ordnance and projectiles."

These breech loading ordnance have a number of chambers disposed around the centre of the barrel for the purpose of delivering a shower of balls or for firing singly. The breech is provided with a rotating part bored to correspond with the chambers and connected to the barrel by a kind of bayonet fastening by means of which the charges are introduced and also provided with a percussion striker for each to be brought opposite the charges by rotating the breech piece one sixth of a revolution after the loading. When the chambers are to be fired singly the barrel is rotated in the trunnion ring so as to bring each in a vertical line successively. The percussion strikers are acted on by hand by means of a hammer or mallet in firing. I further prevent the recoil of the gun by attaching a spur at the tail end of its supporting carriage, which buries itself in the ground for that purpose. The projectile is made either in one or two parts.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, February 10.—N° 451.

TUCKER, HENRY CHARLES.—(*Provisional protection only.*)—" Improvements in apparatus for shearing " and clipping sheep and other animals."

The apparatus consists of a box provided with a handle for convenience of holding. At the front edge of the box is fitted a reciprocating cutter bar working above fixed cutters.

Motion is imparted to the cutter bar by a shaft at right angles to the direction of motion and terminating in a crank arm working in a slot formed in a part of the cutter bar. This shaft is partially rotated in either direction by an escapement wheel and spring and train, the motion being transmitted to the cutter bar by the aid of lever projections on the said shaft through the crank arm above mentioned.

Instead of using a spring for actuating the cutters, they may be worked by a handle mounted on the outside of the box.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 10.—N° 452.

SCHLOTTER, HERRMANN.—" An improved method of and apparatus for raising water."

This pump consists of one or more pairs of vertical pipes open at bottom and provided at top with clack valves opening outwards. Upon inserting the open bottom ends of the pipes in water and raising and lowering them alternately, water will be made to rise in the tubes and ultimately to run out and escape from the upper ends.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, February 10.—N° 453.

TANSLEY, JAMES.—" Improvements in apparatus for working the rollers of blinds, shutters, and " maps."

For raising and lowering blinds and shutters a screw spindle and traversing nut are used to give rotary motion to the roller carrying the blind or shutter.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 11.—N° 454.

DOBSON, HENRY ARNOLD.—(*Provisional protection only.*)—" An improved carriage spring."

This invention consists in constructing carriage springs of shear steel in a single piece instead of spring steel applied in plates secured together as they are now made.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 11.—N° 455.

CLANCHY, TIMOTHY JOSEPH. — (*Provisional protection only.*) — " Improvements in matches and " fusees."

This invention consists in the combination of a fusee and ordinary lucifer on the same stem or stalk, so that a person is supplied with lights for any purpose, either for lighting a cigar or pipe or other article in the open air or for the purposes where the steady light or flame of a match is requisite.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 11.—N° 456.

SMITH, Thomas.—"Improvements in steam engine counters or registering machines."

The object of the invention is to provide an arrangement of counting wheels adapted to be used without springs, and consists in the combination of two sets of wheels of equal diameters, one set of which are each provided with a tooth capable of impelling the succeeding wheel by passing into any one of ten divisions formed in its periphery. And the spaces between the said divisions are formed into cavities corresponding with the convexity of the plain surface of the wheel working therein, thereby forming a lock without the aid of springs.

The wheels are put into gear as required by means of a pin in the tooth wheel passing into any one of ten holes formed in the back of the division wheel.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 11.—N° 457.

HOLLAND, Charles Menzies.—(*Provisional protection only.*)—"Improvements in the construction of "the permanent way of railways and tramways."

The inventor constructs a wrought iron longitudinal sleeper or bearing plate upon which he places or affixes a rail preferred of steel, and the said rail is caused to rest upon some elastic material placed upon the bearing plate.

Tie bars are arranged at convenient distances, so as to keep the bearing plates and rails at the required gauge, and chairs or clips are bolted or otherwise fixed to the said bearing plates to keep the rail in proper position.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 11.—N° 458.

MELLING, John William.—"Improvements in machinery for cutting or excavating coal and other "minerals."

My invention is applicable to machines with pistons moving to and fro in a cylinder and with cutters connected to the piston rod; and it consists, first, in regulating the passage of air or other fluid from one side of the piston to the other; secondly, in bringing the piston back by a part of the air used to propel it; thirdly, in making the piston rod eccentric to the piston to bring the cutters near the lower surface of the coal to be cut; fourthly, in connecting the cutters to the piston rod so that the cutters are rigid when cutting and fall back from the coal when drawn back; four or other number of cutters are fixed to a rod. Fifthly, in supporting the apparatus on additional wheels placed at right angles to the propelling wheels for the convenience of transport.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, February 11.—N° 459.

VERHULST, Charles, and VERHULST, Louis. — (*A communication from Amand Vandewiele.*)— "Improvements in the arrangement and construction of fire-places."

This invention consists in bringing the fire-place forward beyond the chimney piece, so that the heat may be better diffused in the room; and in the application of a movable hood supported on guide rails and counterbalanced to prevent smoke; also in a swivel valve or damper to regulate the draught in the chimney.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 11.—N° 460.

STONEY, Joseph Roberts.—"Improved appliances for the consumption of smoke and the economizing "of fuel in steam boiler and other furnaces."

This invention consists in the use of two bridges (in a steam boiler flue, for example) with an air space of eighteen or twenty-four inches between. Upon the top of these bridges I mount a "saddle" made of burnt clay or fire brick and having a curvilinear flue through it from end to end. The upper or outer surface of the ends of the "saddle" fit the flue, the centre being hollowed out and communicating with the air space between the bridge fed by trap doors in the front bridge. Upward communications are formed between the "saddle" flue and the hollow in the top of the saddle as well as with the air space between the bridges. Air is thus admitted to the top of the "saddle" flue and mingles with that entering from the bottom communications and effects the desired results.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 11.—N° 461.

PICKARD, William. — (*Provisional protection only.*) — "An improvement in woollen condensing "machinery."

The objects of this invention are to make outside "slubbins" in "condensers" equable with the remaining "slubbins" and better mixed than is now the case, and for this purpose I impart a reciprocating motion to the "licker in" shaft in addition to its present rotary one by means of a disc (whose plane of rotation is not at right angles with the axis of the "licker in" shaft on which it is keyed) working in a jaw fixed to the side of the frame.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 11.—N° 462.

HUMPHREYS, Henry Temple.—(*Provisional protection only.*)—"A new process for the decarbonization "of molten iron for its conversion into steel, which process is also applicable for the decarbonization of "other substances."

The molten iron from the furnace is carried to the edge of a suitably arranged fall of about a hundred feet or other convenient height, and allowed to drop in a shower through a perforated plate or plates of such a size in the perforations that the amount of division of the molten metal together with the rapidity of the descent shall cause the same to be converted into steel on its arrival at the bottom of the fall or series of falls, where also can be added, if found desirable, the requisite quantities of ores of manganese for perfecting the quality of the steel formed by this process.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 11.—N° 463.

SEAMER, George.—"Improvements in the manufacture of silk fancy weavings."

The improvements relate to producing various ornamental effects in combinations of "shot" with moira antique.

For this purpose two wefts are employed, one for the face and one of the back; the face weft may be of the same or of different color from the warp, according to the effect to be produced. The selection is for "twill," and the general arrangement for half "tissue" and half "tabby," the tabby being "tissued" right through shoot and shoot.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 11.—N° 464.

SCHÄFER, Frederick.—"A new or improved apparatus for testing eggs."

This consists of a reflector and two apertures, the latter at right angles to one another, and each forming an angle of 45° with the reflector, so that the rays of light falling on the reflector through one aperture are reflected through the other. The egg is placed in one aperture and the eye is applied to the other.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 11.—N° 465.

BRIN, Arthur.—"Certain improvements in apparatus for generating and applying gas from air and "hydrocarbon fluids for lighting and heating purposes."

This relates to the carburation of air by forcing a current through porous material impregnated with a hydrocarbon fluid. The main feature of the invention is the combination of a continuous feed in drops with a regular and automatic distribution of the volatile liquid. The liquid descends gradually from a reservoir to an intermediate vessel called a feeder, from which it is conducted in drops by cords or wicks to a vessel containing the porous material which is thus kept impregnated with the liquid.

Air is forced by a fan driven by clockwork through this carburetting vessel, and becoming carburetted passes off in the form of gaseous vapour by a pipe to one or more burners. The reservoir may for safety be surrounded with a jacket containing water, gasometers or holders may be connected with the apparatus. In one of the arrangements described the feeder has a set of syphon tubes, the short legs of which are of gradually diminishing length, so that by raising or lowering the set less or more of them dip in the liquid, and the supply may thus be regulated. To apply the invention to a blast or blow pipe the air from the blower serves both to engender the gaseous mixture and to furnish the air for keeping up combustion. For heating a tubular boiler there is a box at one end divided into two compartments, in each of which a set short conical tubes is fitted. The tubes in the outer compartment project into those in the other compartment; each pair forms a blast or blow pipe and is opposite the end one of the boiler tubes. The gaseous vapor is led into the inner compartment and a current of air into the outer. A peculiar arrangement of the boiler tubes is also described.

The invention is stated to apply to heating culinary apparatus and railway carriages; the latter application is explained.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 11.—N° 466.

WILLIAMSON, John Stonehouse.—(*Provisional protection only.*)—" Improvements in drying machinery " useful for drying corn and other vegetable substances."

This invention consists in placing one tube within another with a space between them. A furnace or fire is placed so that the heat is made to travel along the bottom of the inner tube and back again along the sides and top, the smoke escaping by a chimney.

The inner tube has a screen or screens therein with a reciprocating motion imparted thereto, or a circular cylinder is made to revolve, having a spiral screw inside, on which the grain is made to travel from one end to the other, and when operated on it falls into coolers attached to the machine, it being carried by spiral screw arrangement to the other end of the machine and then falls into sacks.

The coolers are made to act as sifters to clean the grain in its progress to the sacks.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 11.—N° 467.

NEWTON, William Edward.—(*A communication from John Benjamin Stoner, Leopold Mendelson, and Theodore Crommelin.*)—" An improved apparatus for saving life in cases of shipwreck."

The apparatus consists of an india rubber dress to envelope the whole person, and a cork jacket strapped on outside. The wearer is provided with a pair of fan shaped propellers fitted to the hands or arms. There is also a floating metal receptacle to contain provisions and water; this is attached to the body by a cord.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 11.—N° 468.

WOOLLEY, William Toulman.—(*Provisional protection only.*)—" Improvements in locks or fastenings " for purses, pocket books, bags, and other articles."

The invention relates to such description of locks or fastenings known as double action locks, in which a spring bolt and another bolt acted upon by a key are employed.

According to the present invention the spring catch or bolt is connected to a sliding plate or ornament on the outside of the lock, so that it can be operated by the hand whilst the "pipe" of the lock is a fixture therein, and is altogether independent of the spring catch or bolt.

By these means, whether the key is in the lock or not after unlocking, the spring catch may be operated to connect or disconnect the lock with its hasp without any injury to the lock.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 11.—N° 469.

WENDEN, John, and FUSSELL, Simon Peter Booth.—(*Provisional protection only.*)—" An " improved process for ornamenting glass."

In our improved process we first grind the whole surface of the glass and then lay on the pattern with varnish or other resisting medium in the ordinary way, but instead of eating away or etching in the pattern by strong acid so as to produce a sunken surface of clear glass or nearly so, as usually done, we dilute the acid with from 10 to 20 times its own bulk of water (more or less), so that the acid instead of eating away or etching down the surface of the glass merely produces a stain upon the same.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 11.—N° 470.

LISTER, Samuel Cunliffe.—" Improvements in looms for weaving cut pile fabrics."

This Provisional Specification describes the sharpening a knife for cutting asunder two pile fabrics as they are woven together face to face by the use of revolving, grinding, or polishing surfaces; the revolving, grinding, or polishing surfaces act upon the knife whilst it remains at rest at one or both sides of the loom.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, February 12.—N° 471.

BARRON, Henry Stracey.—(*Provisional protection only.*)—" Improvements in double-action reciprocating " pumps, by which the usual suction and delivery valves are dispensed with and their functions performed " by means of a sliding action of the barrel."

Each end of working barrel has a series of circumferential openings which are made to come in contact with similar ones in an outer barrel, these being in communication with suction and delivery pipes respectively. The sliding action of barrel is performed by the piston at first and completed by the pressure & vacuum acting at either end of the working barrel on its annular surface, that is, the portion intervening between the circle of piston & outer barrel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 12.—N° 472.

SMITH, John.—(*Provisional protection only.*)—" Improvements in apparatus for boiling animal and vege" table substances, and for evaporating the solutions obtained in such processes."

My invention consists in applying the closed vessel in which hot fluid circulates, as described in the Patent granted to me on the 3rd of August 1867, N° 2243, to boiling bones, dye woods, and other substances. In evaporating the solutions obtained the manhole lid must be taken off the closed vessel, or an exit provided for the steam. By this apparatus processes giving off the most offensive smells may be performed without nuisance.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 12.—N° 473.

BAYFORD, Augustus Frederick.—" Improved apparatus for facilitatng the watering of plants in pots " in conservatories, greenhouses, and other similar structures."

The tube is of metal, hollow, and curved at the end, and of any length upon which the suction power of the syringe will efficiently act, and may be made to open and shut like a telescope. It is screwed or otherwise fastened to the end of a syringe instead of the rose usually employed, and may be removed at pleasure. A small rose may be readily placed on the tube if required. Any large syringe will answer the purpose.

To use it the end of the tube is immersed in water, and the syringe filled & discharged in the usual way.

The advantages of the above mentioned invention consist in a considerable saving of time & labor in all cases in which the ordinary watering pot is required to be raised above the level of the hip. It is peculiarly adapted for watering plants on high shelves, behind other plants, or suspended in the air. From the small size of the tube accidents while watering plants in these & similar situations will be more readily avoided.

The above advantages and its trifling cost render the greenhouse syringe tube equally worthy the attention of the amateur and professional gardener.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 12.—N° 474.

THORNTON, James, and VOSS, Friedrich Wilhelm.—(*Provisional protection only.*)—" Improvements " in portable weighing apparatus."

The application of the principle of the steelyard to a series of tubes or bars, by means of which the apparatus may be shut up so as to form the handle of a bag or basket or be carried in the pocket, and it may be also applied to ordinary pocket telescopes, spirit levels, and rules.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 12.—N° 475.

YOUNG, Robert.—" Improvements in apparatus for training, levelling, and dressing millstones."

This invention comprises improvements relating to framing to be applied to a millstone with an adjustable swivelling guide or holder and a sliding arm for carrying instruments or tools for training (or testing the level of), for levelling, and for dressing the surface of the stone. The invention also comprises various improved arrangements of dressing tools and their actuating details for operating with diamonds or other hard stones, or with steel cutters.

[Printed, 2*s.* Drawings.]

A.D. 1868, February 12.—N° 476.

ROSS, Robert Craig.—" Certain improvements in mechanism or apparatus to be employed for cutting " paper, pasteboard, textile fabrics, and similar substances or materials."

The novelty and feature of the invention consists, first, in arranging or applying a circular cutter on a shaft mounted in bearings, which shaft may be driven by hand or power, and the bearings may be fixed and the cutter revolve in one position or moveable so that the disc cutter may travel or advance whilst revolving.

Secondly, in the use of a knife or cutter having a lateral traverse, or if desired a lateral reciprocating motion and an inclined or angled cutting edge, which may be adjusted to any angle by slots and set screws, or the knife may be double edged, and the angles right and left, so as to cut both in a forward and backward movement, or two cutters may be used, one above and the other below, to cut towards the centre of the thickness of the paper.

The material to be cut is secured by clamp or otherwise on a table or bed, and which may either be stationary or may move laterally.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 12.—N° 477.

HUDSON, Walter Greville Conyers.—(*A communication from Charles Henry Hudson.*)—(*Provisional protection only.*)—" Improvements in revolving stands for culinary purposes."

This invention relates to an improved construction of revolving stand to be used in ovens of stoves and before kitchen fires, either by placing a pan or other culinary utensil on a revolving disc which can be turned to any required position by means of projections fixed on to the outer rim, and working on a pin fixed into a stationary disc raised from the hot plate of a stove or other surfaces upon which it may be placed by three feet for the purpose of permitting the heated air to come into contact with the article placed on the revolving stand freely and uniformly. Recesses are also made in the stationary and revolving discs for a similar purpose, and articles may be placed upon the revolving disc without the intervention of either a pan or other utensils.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 12.—N° 478.

TUCKER, Samuel Blatchford.—(*A communication from John Webster Cochran.*)—" Improvements " in cartridge boxes or holders."

The said improvements relate to boxes or frames for holding metallic cased cartridges in such a manner that they may be carried therein without danger of being crushed or otherwise injured by coming in contact with each other, and may be quickly and conveniently inserted into the box or removed from the same; and the said improvements consist chiefly in constructing the said boxes or frames with peculiarly arranged portions of india rubber or other similarly elastic material which binds or gripes the ends or sides of the cartridges and keeps each cartridge separate from the others in the same box. I construct a box or frame of wood or other suitable substance, within which I enclose the elastic material for holding the cartridges. I either form such elastic material with cells or chambers into which the cartridges are inserted endwise, or I place portions of such material at one side or on two opposite sides of the frame and form therein recesses to receive the ends of the cartridges. The elastic cells are partially filled with any suitable lubricating substance, and the cartridges are thereby covered with such substance.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 12.—N° 479.

WOOTTON, William.—" Improvements in envelopes."

According to this Provisional Specification in order to prevent envelopes being unfastened by means of steam or water, the under part of the lap of the envelope is coated with a waterproof substance and afterwards with mucilage.

Also a chemical substance may be applied to the lap of an envelope which changes color upon heat being applied to it. A pouch placed inside an envelope is also described to contain articles which require greater security than an ordinary envelope.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 12.—N° 480.

CONDY, Henry Bollman.—" Improvements in the manufacture of acetic acid and in the preparation of " materials to be used in the said manufacture."

This Provisional Specification describes processes for the manufacturing aceto chloride of calcium and for obtaining acetic acid therefrom.

[Printed, 4*d*. No Drawings.]

A.D. 1867, February 12.—N° 481.

ILLANS, Jacob Geoghegan.—" Improvements in the manufacture of iron and steel."

This Provisional Specification describes the cementing of granulated or divided cast iron enveloped or ated with carbon to render it more fluid for castings and improved for after conversion into steel or alleable.

Also the mixing of ores and oxides of iron with coal, the mixture being smelted by other fuel by blast.

Also decarburetting granules of cast iron by oxide, separating the latter, and melting the metal along with her metal in crucibles or in a gas furnace, or blowing iron granules and oxide down by blast from this ixture with carbon in a cupola.

[Printed, 6*d*. No Drawings.]

A.D. 1868, February 12.—N° 482.

OWLE, John.—(*Provisional protection only*.)—" Improvements in the arrangement of sewers and drains for the collection and distribution of sewage matters."

I carry off the storm waters of towns by separate small drains or pipes laid under the gutters on either side of a street. I collect house sewage by means of pipes laid in every street connected by other pipes to each house drain.

These street and house pipes are to be placed in communication with the mains, which are to be independent of each other as much as possible, being laid side by side as they approach the outfall where they discharge. At the outfall I propose to form two reservoirs side by side, with an incline on each side, so that carts may enter said reservoirs to load and unload.

I collect the refuse, street sweepings, and ashes in these pits, whereby a valuable deodorized compost may be produced.

These outfalls are to be provided with navigable communication for boats to take in the liquid or solid sewage matters and convey them where required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 13.—N° 483.

SEVILLE, Samuel.—"Certain improvements in machinery or apparatus to be employed for sizeing and " balling yarns and threads."

The novelty and feature of the invention consists in combining or applying a machine such as is now used for forming yarn balls to the delivery end of such machines as "tape legs," "slashers" or other suitable apparatus used for sizeing yarns, so as to constitute a sizeing and balling machine to accomplish both objects at one continuous operation.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 13.—N° 484.

TAUNTON, William George Henry. — (*Provisional protection only*.) — "Improvements in the " construction of pumps and in mechanism employed in working the same."

Relates to cheap, durable, easily repaired lift pumps. An annular space is formed within the pump head, and a hollow cylindrical bucket, packed on one or both surfaces, and fitted with a valve on its upper end, to which the spear rod is attached, is caused to reciprocate therein. The bottom box is fitted in or near the top of the liquid passage or way which is encircled for a short distance downwards by the said annular space. The suction pipe, for the purpose of reducing friction, is carried upwards in a straight line into the said passage or way.

Pumps of ordinary construction can be altered and adapted by fitting a hollow cylindrical or other piece with the bottom box therein within the working barrel, and attaching a hollow cylindrical bucket to the spear rod.

The mechanism to be employed in operating the said pumps consists of a lever working on a moveable fulcrum supported in a bracket rising frame-wise from the pump head. The said lever is jointed to the spear rod, and the fulcrum is shifted or moved by placing it in apertures in the frame and through the lever at a point nearer to or further from the spear rod end, so as thereby to increase or decrease the length of stroke.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 13.—N° 485.

GEORGE, Richard.—" Improvements in gas stoves for heating and ventilating."

This Provisional Specification describes improved arrangements in the mode of addmiting air to and in carrying off the products of combustion from gas stoves, and also in the arrangement and construction of such stoves for heating and ventilating apartments or building by the heat radiated therefrom in combination with a current of warm air, heated in its passage through the stove into the room or building.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 13.—N° 486.

GRENIER, Francois.—(*Provisional protection only.*)—" An improved kneading apparatus."

This apparatus is constructed of a wooden tub turning on a vertical axis; in the centre of this tub is a large nave or boss, leaving an annular space in the tub, the section of which is that of a trapeze. In this annular space, and at equal distances apart, are two vertical shafts, one carrying a set of helical blades or beaters and the other straight or oblique blades, for respectively raising and mixing the dough, two scrapers being provided to prevent the dough from adhering to the apparatus.

The apparatus is supported on a metal or wood framework. Gearing and bands give motion to the several parts.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 13.—N° 487.

DEVERNA, William Edward.—" A new or improved fastener applicable as a substitute for buckles and " such like purposes."

According to this invention a small plate or frame of metal having two side pieces attached is turned or curved at one end, such curved portion having two apertures cut therein.

The division forms a bar for fixing the strap or band, and the upper aperture is for securing the tab. The other end of the plate is provided with a fluted roller set between the side pieces, and a finger plate pressed or tilted by a spring is set above the first plate so as to cause the strap or band, which is passed between it and the roller (through a space in the under plate), to be held tightly; by relieving the finger plate from contact the strap or band can be withdrawn.

[Printed, 6*d.* Drawing.]

A.D. 1868, February 13.—N° 488.

WOOD, John.—(*Provisional protection only.*)—" Improvements in indicating the position of railway " points, and in the apparatus or means employed therefor."

The feature of novelty which constitutes this invention is, the special arrangement of the operative parts [*of signalling apparatus**] in such a manner as to prevent or counteract the injurious effect of the sudden shock or instantaneous movement of the indicating mechanism as at present constructed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 13.—N° 489.

BLYTH, Charles.—" Improvements in machinery and apparatus for measuring and cutting cloth for " bags and for other purposes."

Machinery or apparatus by which several pieces of cloth can be " drawn off," gauged, & measured and cross cut into any required length for bag or sack making and such like and other purposes, whilst the quantity of stuff used is recorded. These objects are effected by mounting a number of rollers containing the cloth to be cut, or over which it is made to pass on its way to the cutters; within a frame, and disposed either horizontally or vertically, and by means of fair leaders, bars, or rollers, the several pieces after being brought over one roller are separated and then carried together between a pressing roller and a revolving feeding roller, upon and around which an endless web or feeding belt (of about the length of the table) is made to work for the purpose of carrying forward to the cutter the several thicknesses of material intended to be cut through at one operation.

The pressing and drawing off rollers are fitted at one end of a table, whilst the knife is mounted at the other end.

The cutting is effected by means of a pressing lever or lever arm, which is brought down upon the cloth, and opposite to a corresponding slot in the table. This arm is made with a slot or groove along its length for the purpose of allowing a knife or cutter to pass through, or a traversing plough cutter may be fitted on the under side of the table, so as to operate from the under side whilst the pressing arm folds the cloth over the slot.

By the side of the table a measure or divided bar together with a traversing marker or adjustable pencil is so mounted as to be readily adjusted and brought into action by the operator.

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* The words " of signalling apparatus " are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

The length of cloth used or the number of lengths cut by the machine are recorded by means of a counter or meter.

[Printed, 3*s*. 4*d*. Drawings.]

A.D. 1868, February 13.—N° 490.

TOLHAUSEN, FREDERICK.—(*A communication from Alexandre Joseph Marie Rennes.*)—" New or improved " processes and machinery or apparatus for brush making."

This invention relates to mechanical processes, machinery, and apparatus by which brushes can be produced in a self-acting way. The principal organs or implements of which this machinery is composed, and which may also be used separately, are as follows:—An apparatus for separating the bristles by means of a forked needle or comb tooth forms to receive the bunches of bristles. A carriage for holding the handle stock or back of the brush whilst being operated upon, and for moving it in different directions; needles of various shapes for drawing into the handle the mesh or bunch of brushing materials. A thread tightener and a reciprocating drum for regulating the feed of the binding thread, and drawing and holding the same tight; cutters or shears for nipping the bristles after being drawn in, and also a reading apparatus for executing designs. The whole of these organs are worked by means of sectorial racks, and straight racks, rocking shafts, and cams of various descriptions, to be driven by a treadle or by pulleys.

[Printed, 3*s*. 6*d*. Drawings.]

A.D. 1868, February 13.—N° 491.

WOODFIELD, WILLIAM.—(*Provisional protection only.*)—" Improvements in papering needles or making " up packets of needles for sale."

According to this invention the paper wrapper in which the needles are to be enclosed is cut transversely across its upper end to the middle division of the paper, so as to form loose side pieces or wings, which side pieces or wings are folded upon and made to cover the heads and upper ends of the needles enclosed in a case or sheath made by folding and pasting the lower part of the paper wrapper. The flaps at the top and bottom of the case or sheath are folded and engaged together in the ordinary way.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 13.—N° 492.

ROBERTS, GEORGE.—(*Provisional protection only.*)—" Improvements in candles."

This invention consists in forming the lower ends of candles with a series of graduated steps, either in the form of concentric rings or in the form of projections, of which steps the uppermost one is larger than the candle, while the lowest one is either of the same diameter as or smaller than the candle, so that the candle will fit with the one or the other of the steps into candlesticks that may be either larger or smaller than the body of the candle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 13.—N° 493.

LAKE, WILLIAM ROBERT.—(*A communication from Ferdinand Formhals.*)—" An improved mode of and " apparatus for extracting and condensing the volatile portions of ores."

The nature of my invention, which is more especially designed for the treatment of ores containing quicksilver, consists chiefly in the combination of a furnace for roasting ores with apparatus for condensing the volatile substances expelled from the same. The said invention also consists partly in the means for creating a draught or current of air whereby the combustion in the furnace is increased, and the said volatile products are carried from the furnace to the condensing apparatus. The ore or rock as it is taken from the mine is placed in the furnace and roasted. The said furnace is closed and provided near the top with an eduction pipe which conducts the volatile products and smoke into a column whose upper part is provided with vertical tubes surrounded with water. The lower portion or base of the column is also filled with water, a chamber being left between the said base and the part containing the tubes. A pipe extends from this chamber into the upper part or cover of a box or tank which contains an inclined screw or worm with a broad or deep blade surrounded by a cover. The said screw revolves on a central shaft supported in bearings in the tank. At the lower end of this screw is a chamber in which is inserted a curved pipe with its mouth upward; this pipe extends through the end of the box into the condensing tank where it is bent downward.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 13.—N° 494.

LAKE, William Robert.—(*A communication from Daniel Talcott.*)—" An improved whip holder."

The said holder has two fingers which are secured to a centre pin on the base of the holder. When a whip is inserted between these fingers the latter are raised and the points separated by means of a wedge at the base. The weight of the whip causes the fingers to resume their horizontal position and thereby grasp the whip firmly.

[Printed, 8*d*. Drawings.]

A.D. 1868, February 14.—N° 495.

ELLAND, David.—(*Provisional protection only.*)—" Improved apparatus for signalling in railway carriages " between drivers and guard."

The features of novelty which constitute this invention of applying the rope or are, 1st, the two wheels fixed under each carriage, the said rope or passing through or connected to the axle of N° 2 wheel.

2nd. The setting in motion of the wheels, viz., by turning a handle in any compartment of a carriage; and when thus set in motion, the winding the rope in front and rear at the same time, on the axle of N° 2 wheel.

3rd. The spring that draws back N° 1 wheel from the axle of the carriage wheel, the moment the handle, (that moves N° 1 wheel on the carriage axle) is let go. 4th, the spiral spring fixed under the tender and connected with the rope or which said spring breaks the sudden check of the rope or when in motion, and also draws back the said rope to its proper position the moment N° 1 wheel is drawn back from the axle of the carriage wheel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 14.—N° 496.

BONNEVILLE, Henri Adrien.—(*A communication from Emil Zinssmann.*)—" Certain improvements " in compound of aniline colours."

This invention consists in a compound which is soluble in water and made of aniline colours, which in themselves are not soluble in water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 14.—N° 497.

BONNEVILLE, Henri Adrien.—(*A communication from Guillaume Auguste Richner.*)—" Improvements " in moderator or carcel lamps."

These improvements relate to an apparatus adapted to moderator or carcel lamps, which, by means of automical clockwork, gives warning when the mechanism of the lamp requires winding up.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 14.—N° 498.

LEMASSON, Alfred.—" Improvements in the construction of dials or indicators for shewing the distance " travelled by cabs and other public conveyances and the fares due for the same."

The object of this invention is to shew by dials and placards the distance travelled and the fares to pay, also whether the vehicle is engaged by time or distance, and if hired or empty.

The principal features of novelty are in the means by which the dials are actuated, viz., by jointed rods in connection with the indicators, passing under the carriage, to one of the hind wheels of which the end of the rods is attached by means of a ring, the exterior and interior circles of which are eccentric, the latter encircling the nave of the wheel and imparting to an arched piece or segment of a circle a backward and forward motion, and at either end of which is a tooth gearing with a cog wheel, turning one tooth at each revolution of the carriage wheel, which, supposing it to be 3 feet in diameter and the cogs to be 27 in number, each complete course of the rods would indicate on the dial a distance travelled of about 100 yards.

The clockwork for indicating the distances and fares has two dials, one an ordinary clock face for shewing the time, and the other having the various fares marked round it; the mechanism is much the same as usual, the large hand pointing to the distance travelled and the sums to pay, and the small one adds up the fare.

The placards denoting whether the cab is engaged or not, and whether by time or distance, are connected to a lever which when vertical exhibits the word " free," when inclined at an angle of 45 degrees it shews the word " distance," and when horizontal the word " time."

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, February 14.—N° 499.

STEELE, James, and HASTIE, John.—(*Provisional protection only.*)—" Improvements in apparatus " for conveying and treating animal charcoal and sugar."

This invention has for one of its objects the conveying of animal charcoal in a simple and economical manner, and by means which are also conveniently adapted for treating it, either to cool it, air it, dry it, or free it from dust. The invention is also applicable for conveying, cooling, and drying sugar; and consists in arranging pipes or ducts in horizontal, vertical, or other required directions for the conveyance of the animal charcoal or sugar; and in causing air currents produced by any convenient blowing or exhausting apparatus to travel along such pipes in the direction in which the material is to be conveyed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 14.—N° 500.

LACK, Johann Philipp.—(*A communication from Johann Fritz Knipp.*)—" Improvements in albums, " scrap and other similar books."

The invention consists in so fixing the leaves in albums, scrap or other books that they can be removed and rearranged and various characters of leaves and leaves with openings of various sizes and forms for photographs or otherwise may be inserted or removed at pleasure whilst the form of the album or book is retained.

For this purpose the leaves are formed in two parts, one part being in the form of a frame and being connected to the binding in the usual manner, whilst the other portion of the leaf is capable of being fixed in the first mentioned part or frame by being slidden into suitable slits or grooves or in other suitable manner, and it is preferred to form the leaves with slits or openings at the back by which to insert the photographs or scraps.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 14.—N° 501.

GEDGE, William Edward.—(*A communication from Philibert Antoine Hippolyte Schlosser.*)—" A process " having for object the separation of animal from vegetable substances in textile fabrics, rags, or any other " material containing them."

This invention consists in the separation of vegetable from animal substances by means of acid vapours acting in an oven or kiln into which the materials to be treated are introduced.

The materials, say rags of a mixture of cotton or flax with wool or silk, are placed on hurdles which are then introduced into an oven chamber (or the materials to be treated are put into a perforated drum revolving on bearings in the oven or kiln), where they are submitted to the action of acid vapours and heat until the cotton or other vegetable matter will by simple friction fall in dust, and the wool can be withdrawn to be submitted to the action of a beating engine, unravelled, re-carded, and otherwise prepared for renewed employment.

Additional economy is obtained by using this process in combination with the manufacture of sulphate of soda or iron mordants for dyeing and printing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 14.—N° 502.

EICHBAUM, George Adolphus Fitzmaurice.—(*Provisional protection only.*)—" Improvements in " means or apparatus for indicating the amount of money received by omnibus conductors and other " persons."

For this purpose apparatus is employed consisting of a train of gearing, giving motion to hands pointing to suitable marks, divisions, or indications upon dials, and motion is caused to be given to such train of gearing by means of a handle to which a suitable click or driver is connected, such driver giving motion to a suitable ratchet wheel which in its turn gives motion to the hands. The handle in giving motion to the gearing also gives motion to a hammer which for every penny or other unit of money paid sounds a bell and thereby indicates by sound the number of pence or other unit of money received by the person in charge, whilst the hands will by pointing to the marks, divisions, or indications on the dials indicate the gross amount of money received in a given time.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 14.—N° 503.

WISEDILL, George Valentine.—" A new or improved ring for keys and other useful purposes."

According to this invention the ring, whether of metal or other material, is formed with an opening or division, the points of junction having respectively a projection and corresponding cavity, whereby the spring of the ring closes the same, and pressure on the part of the ring having the projection reopens it.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 15.—N° 504.

HOGG, James Allison.—(*Provisional protection only.*)—" Improvements in the method of and means " for increasing the combustion and illuminating power of gas."

This invention consists in interposing a flat plate of an alloy composed of iridium, and other suitable metals, in the flame of an ordinary gas burner, by which more oxygen is admitted to the flame and the intensity of the light increased.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 15.—N° 505.

RAWORTH, John Smith.—" An improved mode of connecting and disconnecting revolving cylindrical " surfaces."

My invention consists in the use of a helix of wire surrounding a shaft or other cylindrical surface, and connected to the inside of a coupling box, wheel, pulley, or other article; this helix, when the shaft or other article is turned in one direction, allows it to revolve, but when turned in the other direction arrests its motion.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, February 15.—N° 506.

MARTIN, Robert.—(*Provisional protection only.*)—" An improvement in heating and deodorizing oils."

The purifying and deodorizing oils by the application of heat at a sufficiently low temperature to vaporise the oil without its attaining the boiling point, the heat being continued until the oil is purified and rendered inodorous.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 15.—N° 507.

RIMES, Richard Hucknall.—" Improvements in boots and shoes."

The novelty consists,—

In the insertion of india-rubber or other elastic material into the soles of boots and shoes.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 15.—N° 508.

WHITTAKER, David.—" Improvements in healds or heddles and other parts of looms, and in machinery " or apparatus connected therewith."

First. Two pieces of bent wire are employed in connection with each eye of the heald, the eye being linked to each pair of wires, the yarns being passed over the two staves of the heald, and the staves are kept at a fixed distance apart by wooden or metal rods.

To bend the wires a machine is employed with a table fixed to the framework, said table having two ribs projecting upwards and a number of guides for holding the wires in their places. Through slots in the table a bender or cross wire passes, which on being moved downwards bends the wires.

The two ends of each bent wire are bent to the form of hooks by passing the wires under leathers and between guide pins, the ends of the said wires being hooked over thin metal plates by pressure.

Second. To the side frames of the loom studs carrying levers are fixed, to one end of which the rest or bearer which vibrates up and down with the levers is connected.

The ends of the levers carrying the rest are connected to one end of spiral springs, the other ends of which are fixed to studs or brackets, and the other ends of the levers are connected to weighting ropes.

Third. Instead of the heavy metal rod with its metal attachments, a wooden board or light metal frame is employed, having studs or pivots working in sockets connected to the slay or sword arms, and the top of the board or frame acts as the reed holder at the time of beating up.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, February 15.—N° 509.

EASTERBROOK, Walter.—" Improvements in machinery or apparatus for actuating, locking, inter- " locking, and controlling railway points and signals."

This invention is as follows :—

Firstly. Instead of employing locking plates on each side of the levers, slotted links or quadrants are employed, working on a horizontal shaft, the said quadrants being moved by pins from the outside rods attached to the spring hand levers; the other ends of the quadrants are connected to the actuating rods (moving in suitable guides), in which are oblique slots for moving the slide bars.

An additional slotted link or quadrant is employed for each lever that requires backlocking, one end working on a second horizontal shaft, the other end having one or more notches for receiving a small projection on one or more of the slide bars.

Secondly. The invention consists in actuating and locking points and signals by means of horizontal screws working in nuts, fixed in the framework, which screws being turned give motion to connecting links or rods, connected to cranks, serving to work the points and signals in the usual way.

Each link has an oblique slot for working a slide bar placed edgeways; notches are made on these slide bars, so that when moved all antagonistic points and signals are locked.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 15.—N° 510.

BENNETT, John William, and JOBSON, John.—(*Provisional protection only.*)—"Improved apparatus "for separating the solid and watery particles of slop and sewage."

The invention refers to the use of porous tanks for running off the water of wet mud, &c., and assisting the deposit of solid matters.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 15.—N° 511.

COTTAM, Edward.—"Improvements in breech-loading fire arms."

This relates to arms with a turning breech block with the axis parallel with the barrel. A quill or tube is fitted on the joint pin within the joint or knuckle of the block; it carries a bent arm forming the extractor, which arm fits in a groove so that the quill cannot turn. The quill is slotted, and a pin or roller passed through the knuckle takes into the slot, which is partly transverse and partly oblique or spiral. On opening the block the pin moves first in the transverse part and then in the spiral part, so that the quill and extractor are drawn back. The reverse movements take place in returning the block. The movement of the quill cocks the gun, condensing the spring for impelling the striking pin. This spring may be in the knuckle or in the body of the block, and may be spiral or tong-shaped, with or without a twist to pass round the joint pin. Sometimes an additional quill is used with a spiral slot or projecting inclined cheeks to compress the spring. The operations described for moving the extractor and compressing the spring may be used separately or conjointly. Instead of having quills, a groove or grooves corresponding to the slot or slots may be formed in the joint pin, which is then free to move longitudinally. To put the gun at half-cock a lever is fitted to the corresponding quill. In guns with an ordinary lock, in its present position a central blow is obtained upon the part for impelling the exploding pin by elongating the tumbler and fitting a hammer thereon, the present cock or a lever being used to cock.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 15.—N° 512.

FARMER, Benjamin.—(*Provisional protection only.*)—"Improved breaking and crushing and hammering "machinery useful for crushing stone and minerals and hammering iron, steel, brass, copper, and other "substances, and in forming wrought steel bells."

This invention has reference to a steam tilt hammer. The hammer block is hollowed, and has a number of holes at the bottom, through which the crushed stone or mineral passes. The hammer has a jagged face, but this jagged hammer can be replaced by plain faced or other hammers for hammering or forging metals and so forth.

Wrought steel bells are formed by means of a block without the number of holes above mentioned, using therewith a hammer which corresponds with the form of the bell, the block corresponding in the same way.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 15.—N° 513.

CLARK, Alexander Melville.—(*A communication from Louis Auguste Roux.*)—(*Provisional protection only.*)—"An improved material applicable for the manufacture of felted and other fabrics."

This invention relates to the application of a weft in all kinds of machine knitted fabrics, to be used more particularly in the manufacture of cloth fabrics, and for other fabrics where fulling is not required.

The weft may be applied in all machines for the manufacture of knitted webs, but more particularly in stocking frames and warp or net machines. For ordinary stocking frames and warp machines worked by hand the weft is to be led to the needles by the aid of a conductor set in motion by a treadle.

In machine stocking frames the said conductor or thrower will be set in motion by the shaft. Lastly, in those warp or net machines driven by power, the conductor will receive motion either by the aid of the shaft or an auxiliary part. These improvements are also applicable to curvilinear or circular looms.

The invention thus consists in the production of a knitted weft fabric in all kinds of looms, to be used either without being fulled or when fulled for the manufacture of cloth fabrics.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 15.—N° 514.

BARLOW, JONATHAN.—(*Partly a communication from George Keller.*)—" Improvements in carriages."

This Provisional Specification describes the making the upper part of the door, which contains the glass and shutter guides to fold down on hinges against the inside of the door; also where this arrangement is not employed the applying apparatus for preventing the ordinary latch handle of the door from being turned to unfasten the door when the glass is up.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 15.—N° 515.

MUMMENHOFF, LOUIS.—(*A communication from Nicolaus Schroder.*)—" Improvements in compositions " for the manufacture of building blocks and for use in building."

According to this Provisional Specification the following mixture is used for building purposes:—Ashes of coal and coke, and Portland, Roman, or other similar cement; other materials are also combined with this mixture, varying according to the purpose for which the composition is required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 15.—N° 516.

LEETCH, JAMES.—(*Provisional protection only.*)—" An improved apparatus for transmitting signals by " pneumatic pressure."

The said invention relates to signalling apparatus in which whistles at the points in communication are caused to sound by pneumatic pressure in tubes connecting such whistles. The said invention consists chiefly in the construction of a joint or coupling, which is a short tube of such a diameter that the flexible tubing fits tightly thereon when drawn over a ring or collar formed on the same. In railway trains I prefer to provide each carriage with these joints, to which pieces of flexible tubing are attached, the said pieces of tubing being connected when the train is made up by another joint, which is formed with a collar or ring at each end. When it is desired to provide the means of communication between the passengers and the guard I employ mouth pieces with a hinged valve, which by means of a spring or other suitable device is rendered self closing when the mouth piece is not being used.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 17.—N° 517.

CLARK, JOHN, and VICARS, THOMAS.—" An improved tobacco box and tobacco cutting machine " combined."

A screw of fine pitch is supported on bearings within a tobacco box of any desired form. The said screw projects beyond the end or mouth of the box and carries a knife; the lid of the box is attached to the knife and serves as a handle. A travelling nut or feed piece is placed on the said screws. When, therefore, the screw is rotated the tobacco is fed by the motion of the feed piece outwards, and a thin slice or shaving is cut off each revolution by the knife as it comes round.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 17.—N° 518.

TASKER, WILLIAM HENRY.—(*Provisional protection only.*)—" Improvements in or applicable to machinery for spinning and twisting fibrous substances."

The novelty consists in,—

Introducing into the hole in the neck of flyers employed in Speight's invention a tube of fine polished glass, or of glazed pot, or of metal or other material enamelled, or by having the hole in the flyer enamelled.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 17.—N° 519.

RANDON, Alexander Horace.—(*A communication from Benjamin B. Hotchkiss.*)—"Improvements in breech-loading fire arms and cartridges."

The novelty consists,—

First. In opening and cocking the gun by a single motion. This is effected by forming on the extremity f the closing bolt a groove in which the bolt is turned on its axis, then drawn back, the cartridge inserted, nd the bolt being pushed home the hammer is left in a position for firing by pulling the trigger.

Second. In effecting the closing and opening more rapidly and easily by curving the extremity of such uiding slot or groove.

Third. In adapting to such arms an extractor remaining stationary during the rotary motion imparted to he bolt and actuated by a part of the rectilinear motion.

Fourth. In adapting to such arms metallic cartridges made in one piece charged with a cap or fulminate eld in its place either by a wad of compressed cardboard or compressed gunpowder.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 17.—N° 520.

WORRALL, James Preston.—(*Provisional protection only.*)—"Certain improvements in the treatment of "fabrics for the purpose of imitating skins of animals."

The novelty and feature of the invention consists in the combination of the processes of "raising," dyeing, nd finishing certain woven fabrics to produce a fur-like surface in imitation of the skins of animals, such as eal or beaver skins, for example.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 17.—N° 521.

WILKINSON, William Henry.—"An improved system of type composition and mode of constructing "and arranging the type cases for the same."

The said invention relates to the combined use of types consisting of words or parts of words with ordinary letter or single character type, and to the peculiar arrangement of the cases or boxes for containing such type, whereby great economy is effected with regard to time and labour in type composition and distribution. In carrying my invention into practice I employ a set or series of cases or boxes arranged partially around a central point occupied by the compositor, and divided into compartments for containing the types, which are arranged in tables so that their relative positions may be easily discerned by the eye. The said tables are placed strictly in the order of their relative values as calculated from the average number of words usually contributed by each table in the matter of composition, and each table is arranged in relation to the central point where the compositor stands in such a position as to be accessible to his right hand in proportion to its comparative value as above determined.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 17.—N° 522.

LINCOLN, William.—(*Provisional protection only.*)—"An improved lamp burner."

The said invention relates to burners for lamps for burning petroleum and other mineral oils, and consists chiefly in constructing such burners with an adjustable part which carries the base or gallery for supporting the chimney. This adjustable support is formed with a socket which fits the wick tube, and can be readily fixed upon the same or removed therefrom without detaching the chimney or disturbing the other parts of the burner. The said invention also consists partly in forming the socket which fits the wick tube in such a manner as to leave air passages at the sides of the said tube, the air entering such passages through perforations at the bottom of the socket, and being brought into contact with the wick at the point of combustion through peculiarly formed narrow apertures at the top of the socket. An adjustable perforated cap or cover is placed over the wick tube formed with a wide base, which rests on a perforated plate forming the base whereon the chimney is supported.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 17.—N° 523.

TAYLOR, John George.—(*Provisional protection only.*)—"Improvements in puzzles and puzzle chains "and in the applications thereof."

These puzzles consist of wires, the ends of which are ring shaped to be united by placing in a certain position. The rings are formed at each end of the wire and turned in opposite directions.

These ring wires are to be used in connection with other wires similarly provided with rings or eyes of a straight, circular, or heart shaped form, so as to form puzzles of various kinds; chains adapted t purposes are also formed of these puzzle ring wires.

I purpose making these puzzles and puzzle chains of hard india-rubber or of tubular metal, ceramic material either plain or ornamental, and parti-colored.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 17.—N° 524.

CHEVASSU, François.—(*Provisional protection only.*)—"An improved shirt."

The body of the shirt is of flannel, the front, collar band, cuffs, and in some cases the sleeves being or like material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 17.—N° 525.

WALKER, James.—"Improvements in the manufacture of ornamental tiles, slabs, bricks, a " articles."

According to this Provisional Specification a mould of plaster or of absorbent material is u perforated with holes or air channels, and it may be worked by a press or by hand.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 18.—N° 526.

DUFILHOL, Adrien Marie.—(*Provisional protection only.*)—"An improved method of shoein " and other beasts of burden."

This invention consists in securing the horse shoe to the hoof by means of an intermediate body cement, thereby preserving the elasticity of the hoof into which no nails are inserted.

Notches or grooves are made in the hoof, and projections or recesses formed on the shoe, on w cement is placed, and when softened by heat is applied to the hoof, against which it is pressed by t so that the cement passes into the notches, where it is spread with a soldering iron, the surplus cemen up all interstices outside and inside the hoof.

For additional security nails may be driven through holes in the shoe, pass through the cemen notches, which open on the exterior of the hoof, and be there clenched in the cement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 18.—N° 527.

CRONIER, John.—(*Provisional protection only.*)—"An improved rotary heel for boots and shoes.

That my invention relates to the manufacturing of rotary heels for boots and shoes. The heel is leather adapted by a metal plate well riveted to the heel, the same having a round hole for a screw o to pass through to an interior plate of a smaller size from the inside of the boot or shoe, not interfeari the top part of the heel, giving facility to be repaired, the same as in any ordanary boot or shoe, and by this invention any person can turn the heel round, without useing any tool or removing the enableing them to keep the heels of the boots or shoes always straight, giving great ease in walki great economy in the wear, and by this principle the heel can be removed and a new one adapted removing a screw, in the space of two minutes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 18.—N° 528.

LAKE, William Robert.—(*A communication from Charles L. Cornish and John McDonald.*)—(*Pro protection only.*)—"Improvements in kilns and apparatus employed in the manufacture of bricks."

My improvements relate to a method of burning or baking bricks, tiles, and other articles by them on trucks or moving platforms through a long tunnel provided with means for regulati temperature whereby the bricks or other articles are heated and cooled gradually during their through the tunnel. A fire is made in each truck or platform as the same arrives opposite apertures in the side walls of the tunnel, which is provided with a door at each end to allow the trucks to leave the tunnel upon rails extending through the same. The bottom of the tunnel may be inclined, the trucks or platforms are impelled through the same by gravitation. The latter are construct flanges which project downward into sand or other loose material lying on the bottom of the tunn this means cool air may be caused to circulate below the trucks or platforms without coming in with the bricks. Each truck is provided with a rack which gears into a toothed wheel on a shaft ext through the side of the tunnel and connected with suitable gearing for regulating the position trucks.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 18.—N° 529.

WOLLHEIM, Leonhard.—(*Provisional protection only.*)—" Improvements in apparatus for barometrical " and thermometrical purposes."

This invention consists in constructing an apparatus composed mainly of two vessels communicating with each other by means of a tube, of which vessels one is closed and the other open at top. These are filled with mercury so as to enclose a certain quantity of air in the closed vessel, and are connected in such a manner to the beam of a balance that any alteration in the atmospheric pressure, in causing the mercury to pass from the one vessel to the other, will produce a preponderance on the one or the other side of the balance, and cause it to move; and by providing the balance with a graduated scale and pointer the motion thereof is made to indicate the variations of atmospheric pressure. In order to counteract the effect of changes of temperature upon these vessels, either another closed vessel nearly filled with mercury or a system of rods of two different metals that are expanded unequally by the action of heat is added to the balance beam in such a manner that when changes of temperature in acting upon the mercury in the first described vessels produce a preponderance on the one side of the balance, such changes of temperature will at the same time so act upon the last described contrivances as to produce an equal preponderance on the other side of the balance.

By removing the first described combined vessel or turning them so as to lie in the axis of the balance beam the apparatus is made to act as an oscillating thermometer.

By adding a weight on the one side of the balance beam it may be arranged to indicate pressures beyond the range ordinarily indicated thereby.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 18.—N° 530.

BUTTERWORTH, Robert.—(*Provisional protection only.*)—" Certain improvements in looms employed " in the manufacture of smallware goods."

The novelty and feature of the invention consists in the application and use of bobbins or "beams" in smallware looms which are employed to receive the tape or ribbon as manufactured instead of allowing them to fall into a box or trough. The bobbins or beams are caused to revolve by means of an endless band driven from the "knee" or "taking up roller" in such a manner that they will take up or receive the ribbon or tape uniformly as manufactured, the revolution of the bobbins being governed as they increase in diameter by means of a "drag" apparatus applied to the bobbin shaft, thereby retarding and regulating their speed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 18.—N° 531.

BAGULEY, Rowland. — (*Provisional protection only.*) — " Improvements in shuttles for looms for " weaving."

This invention relates, firstly, to an improved peg or skewer, and, secondly, to the employment of a curved lever attached to the top of the shuttle so that the weft thread is cut (and "floats" prevented) by the end of such lever. Should any obstacle present itself to the free passage of the shuttle along the race, a spiral spring prevents the end of the said lever acting on the weft thread, except when required to cut the weft thread.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 18.—N° 532.

HINKS, James, and **HINKS**, Joseph.—" Improvements in portable stoves."

This invention consists in arranging the parts of portable stoves for burning petroleum oil or petroleum spirit, or other liquid combustible in the following manner:—The body of the stove consists of a hollow perforated cylinder, through the bottom of which the burner of the lamp is passed, the said body being supported by arms or brackets on the lamp. The lamp is carried by a stand provided with handles. In the interior of the body is a metal cone, and on the top of the body is a hollow hot water reservoir or boiler. The hot air passes up the cone and through the hollow reservoir or boiler and cover of the same into the room, carrying with it a portion of steam supplied by the hot water reservoir. The lower part of the body may be made of glass. Instead of placing the lamp outside the body it may be placed inside the body, being introduced and removed from the top.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 18.—N° 533.

CLARK, Alexander Melville.—(*A communication from Gustave de Villepoix and Joseph François Bonnaterre.*)—" An improved vegetable extract for culinary purposes."

This invention consists in the preparation of an aromatic liquid or extract from vegetables and condiments used for culinary purposes.

In a suitable tinned copper still or other culinary utensil furnished with a double bottom, and containing say sixteen gallons of water, I put common salt about 4½ pounds,

Turnips	-	,,	40	,,
Leeks	-	,,	18	,,
Onions	-	,,	1¾	,,
Celery	-	,,	6¾	,,
Parsley	-	,,	1⅛	,,
Cloves	-	,,	200	,,
Garlic	-	,,	8 pods.	

The mixture is then distilled over a slow fire until reduced to about seven gallons; the liquid is next placed in a vessel previously supplied with about twenty-seven pounds of common salt and eighteen pounds of white sugar. These substances serve to preserve all the flavour of the preparation and at same time prevent fermentation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 18.—N° 534.

BROOMAN, Clinton Edgcumbe.—(*A communication from Antoine Alphonse Chassepot.*)—" Improvements in breech-loading fire arms."

This relates to Patent N° 2304, 1866, and is chiefly intended to adapt the arms then patented to flanged cartridges. The caoutchouc obturator is replaced by a metal piston in the front of the breech bolt and held in place by a screw; this piston has a channel of truncated conical form to give passage to the striker or needle. A tooth on the piston works in a longitudinal slot in a plate of the extractor, so that when the bolt is drawn back the extractor is also drawn back as soon as the tooth reaches tbe end of the slot. The fresh cartridge is pushed in by the extractor when the bolt is pushed in. The screw passed through the main or top piece into slots in the bolt in the former Patent is replaced by a plate which serves as a tenon to slide in the groove of the bolt. The tenon on the spring-carrying rod is dispensed with, also the corresponding mortise in the button at the back of the bolt, the whole being replaced by a button or stopper screwed into the rear end of the bolt,

The sight rises on a hinge towards the front of the barrel.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 18.—N° 535.

PERKINS, William, and TANDY, George Grainger.—"An improved preparation or compound applicable for insulating electric conductors and for such purposes as india rubber and other vulcanizable gums are applicable."

The addition of anthracene and napthaline to rubber compounds or other vulcanizable substances.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 18.—N° 536.

NEWTON, William Edward.—(*A communication from John Alexander MacClelland.*)—" An improved material for the base of artificial teeth and for other purposes, and also an improved construction of mould for forming dental plates."

Compound for artificial gums and for holding teeth consists of a combination of pyroxylene and shellac with suitable solvents. The metal moulds are made in sections.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 18.—N° 537.

THOMPSON, Joseph, and THOMPSON, John.—" Improvements in fastening railway rails."

According to this Provisional Specification one or more sides of the screw bolt are flattened; a keyway is cut through the nut, or a groove is cut in it, and a key or wedge is driven into it.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 18.—N° 538.

KEIGHLEY, Arthur Montague.—"Improvements in the method of and means or apparatus for "signalling from one part of a railway train to another."

The features of novelty in my invention of railway passengers' alarm signals consist in the application of lateral sliding bars fixed to the end and outside framing of the railway carriage, which bars on being actuated by a rope or chain inside the carriage throw out or project on each side of the carriage a signal containing a lamp, which is observable by night as well as by day. The features of novelty constituting that part of my invention for communicating between passengers in and the guard or driver of railway trains consists of a rope or chain being carried from carriage to carriage through the ends of each carriage in the centre thereof and connected over the couplings, one end of which rope or chain is carried to the lever of a valve fixed in the main steam pipe of the engine or carried to the whistle, which rope or chain when pulled shuts off the steam or sounds the whistle at the same time that the signals are thrown out at the end of the carriage, as described in the first part of this abridged Specification; one end of the rope is likewise carried to the guard's van, and when pulled strikes a bell or sets at liberty a modification of the before mentioned signals.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, February 18.—N° 539.

WEILD, William.—"Improvements in the process of treating sewing threads to prepare, starch, dress, "polish, and wind the same, and in some of the machinery to be employed therein."

1. The process consists in winding the bobbins from the throstle or "doubler" on to larger bobbins so as to form a warp, then dyeing or bleaching in the chain, then drying, then beaming, then starching, dressing, and polishing and beaming, and then winding each thread of the warp from the beam on to a separate bobbin ready to be wound on to spools for the market. 2. The machinery is an improved combination and arrangement of parts for starching, dressing, polishing, and beaming, and its novelties consist in making the surface of one roller act as the bottom of the starch trough, and making this roller in sections on a strong shaft, weighting the top roller by levers, making the middle rotating beater and the middle rotating burnisher adjustable vertically, the bars of the beaters of iron or steel grooved, or in the form of a screw, so arranged as to be turned when worn; and, lastly, in the arrangement of the mechaism for driving and regulating the speed of the beams. 3. The novelties of the machine for winding the threads from the beam on to bobbins consist in arranging the beam so that it can be slided endways by a rack and pinion; the bobbins upon which the threads are wound are vertical and in three rows, driven by bevel gear through friction cones; the traverse is given by a right and left handed screw.

[Printed, 3*s*. Drawings.]

A.D. 1868, February 18.—N° 540.

BETTS, William.—"Improvements in the production of trade marks or other designs upon metallic "capsules for bottles and other like receptacles, and in the apparatus or means employed therein."

This invention consists in printing trade marks or names upon the sides of metallic capsules by rolling the capsule, which is fitted on to a correspondingly shaped roller, over a bed or transfer surface of india rubber or other like material upon which an impression of the design has been made from a wood block or cast, or type properly adjusted in a chase by set screws or otherwise. The original printing surface should be made the reverse to ordinary type or printing blocks, that is, it is made so as to read the right way in lieu of backwards. The impression may be taken in coloric inks or in gold size or other suitable adhesive material, in which latter case the design is brought out or rendered visible on the side of the capsule by pigmenting or applying dry powdered colors or metallic leaf or powder on to the size.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 18.—N° 541.

CHAMBERLAIN, Humphrey.—(*Provisional protection only.*)—"Improvements in the manufacture of "compressed bricks and in the machinery or apparatus employed therein."

This invention relates to the manufacture of compressed bricks from what is known as "granulated clay," and has for its special object the obviating the disadvantages arising from the presence of confined air in the brick, which air by expanding after the brick has been released from pressure in the mould frequently causes the fracture of the brick. The presence of confined air in the brick also prevents the clay from being compressed to that degree of density which is desirable. All these defects are remedied by this invention, which consists essentially in pressing the bricks two or more times, and each time in a fresh mould, so that the second pressure which is exerted upon a brick delivered from the first mould in the more or less defective state usual in dry brick moulding perfects the article by completing the expulsion of the confined air and equalizing the density of the brick, which according to this invention is turned over or reversed whilst passing from one mould to another, and consequently becomes equally pressed on the top and bottom surfaces.

It is obvious that this invention may be carried out in various ways, but I have found in practice that it may be most conveniently effected by combining together on one bed plate two dry brick compressing machines of the description given in the Specification of Letters Patent granted to me, bearing date the 10th of January 1865, No. 77, and to gear together the two presses or machines so that they may both be driven as one machine from one common driving shaft. After the brick has been delivered from the first press it is received into a self acting cage which turns it over, so that the bottom side of the brick in the first press shall be the top side in the second press, thus ensuring an equalized pressure on both surfaces of the brick and obtaining a brick of uniform density. During this reversal of the brick and its delivery from one press to the other it has time to expand, and when subjected to a second pressure in the fresh mould all defects or cracks will be effectually closed, and the brick wlll be delivered in a perfect state from the second press.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 19.—N° 542.

HIGGINBOTHAM, Joseph, and MOORE, Lewis.—(*Provisional protection only.*)—" Improvements in " machinery for turning, grinding, and polishing rollers or cylinders composed of metal or other material."

This invention relates principally to lathes for turning and polishing copper printing rollers. The headstocks are fitted with conical centres of a sufficient size to sustain the roller without the use of a mandril, the centres in the following headstock revolving with the roller, the centres having key grooves to suit the key in the roller. The sliding carriages carries a tool box, as is usual, and also a shaft fitted at the end with a flat grinding surface of stone or other material, the said grinding surface revolving in contact with the roller as the carriage traverses to and fro. A reversing motion is fitted to the lathe, which is made self-acting so as to change the direction of motion of the carriage at the proper times.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 19.—N° 543.

BEELEY, Thomas.—" Improvements in keirs."

I introduce into the keir a flanged perforated pipe of wrought iron, the flanges being attached to the end plates of the keir. The pipe serves to admit the liquor and also as a stay to strengthen the end plates of the keir and prevent it from exploding, as frequently happens in keirs constructed without a stay. A perforated pipe has been used before to introduce the liquor, but it has not formed a stay, which constitutes my invention.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 19.—N° 544.

BLEZARD, Richard.—" Improvements in machines for cleaning wheat and other grain."

The object, to " polish " grain and free it from extraneous matter. Two main parts are used; the one surrounds the other, and they are caused to rotate in opposite directions. The inner one is an inverted cone, a cylinder, or piece of other form fitted with beaters on its periphery or sides; the outer one is a screen or cage of wirework or perforated metal. The grain is fed between. Screws or other mechanism are provided to bring the parts nearer to or further from each other. The grain is fed between the two, and the earthy and foreign matter thrown outwards through the screen or cage.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 19.—N° 545.

KIRKLAND, John.—" Improvements in the construction of pumps."

Relates to pumps for lifting or forcing by single or double action, and consists,—

First. In placing the suction and discharge valves on one spindle in a valve chamber in communication with the working barrel and suction pipe or pipes. The suction valve is made smaller, or part of the seating of the discharge valve moveable, so that the spindle and valves can be removed in one piece; and,

Second. In employing a chamber in communication with the working barrel with two or more suction pipes provided with closing valves or plugs, so that the pump can be made to act on one or more places at pleasure.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 19.—N° 546.

WRIGHT, Edward.—(*Provisional protection only.*)—" Improvements in self acting means or apparatus " applicable to steam boiler and other furnaces for the consumption or prevention of smoke."

The novelty consists in,—

The application to steam boiler and other furnaces of a self-acting apparatus consisting of a cylinder and piston or bucket with rod connected to a lever, which connects with a steam tap and also with air valves or doors to be opened and closed for admitting steam and air to the said furnaces, and for stopping off the same as required.

[Printed, 4d. No Drawings.]

A.D. 1868, February 19.—N° 547.

COOKE, William, and COOKE, John.—" Improvements in the manufacture of finished irons."

According to this invention a cupola is employed in conjunction with a refinery with tuyeres for the blast. Coke or charcoal is supplied to the cupola, and the iron becomes molten and passes into the refinery, which is filled with charcoal; the iron is then conveyed to the puddling furnaces and made into finished iron.

[Printed, 6d. Drawing.]

A.D. 1868, February 19.—N° 548.

YOUNG, Edward William.—" Improvements in the construction of bridges."

This invention consists in the construction of bridges of a compound character of which the essential characteristic is the supporting of a suspension bridge by two cantilevers.

[Printed, 10d. Drawing.]

A.D. 1868, February 19.—N° 549.

KING, Joseph Jackson.—" Improvements in sewing machines."

This invention relates to the adaptation of sewing machines of a simple and effective contrivance for producing sewing over or round the edge of or through the material, and of a feed guide to be used in sewing button holes and for producing ornamental devices. The invention consists in the first place in combining the action of a cork-screw needle worked from below with that of a straight vertically reciprocating needle working from above. Each needle has a thread drawn off a bobbin and passed through an eye near the point. The upper needle having formed a loop below the cloth in the ordinary way, the corkscrew needle passes through this loop, and continuing its motion helically upwards and circularly carries its point round the edge of the material to the upper side thereof, where it lays its thread so as to be interlooped by the vertical needle in this needle's next descent. In another modification the corkscrew needle is without a thread, and is formed with a notch or spur which catches the loop of the upper needle below the material and carries it round the edge to the upper side, where the upper needle enters it when next descending. The improved button-hole or ornamental feed guide is arranged in connection with the presser foot which instead of being of the ordinary form is made like a flat circular button with a hole for the passage of the needle down through it. On this presser foot there is fitted a kind of slipper, the sole or under side of which is roughened, and which may, if required, have points projecting down into the material to ensure the moving together of the slipper and material. The slipper is capable of moving on the foot, and is guided by the action on the stem of the foot of a suitably shaped slot in its upper side. The guide is to be used along with the ordinary four-motion or other suitable feed applied below the fabric, but in a line a little outside of the centre of the presser foot.

[Printed, 10d. Drawing.]

A.D. 1868, February 19.—N° 550.

STEEL, William Henry.—" Improvements in hand saws for cutting dovetails and for other purposes."

This invention consists in certain improvements in the construction of hand saws for cutting dovetails and other purposes, whereby the dovetails are completed by the hand saws without the use of any other tools.

This is effected by having the part of the blade plate turned up at an angle to the blade, which angle is determined by the character of the dovetail required; on the edge of this turned blade the teeth are made. On using this the blade is placed flat upon the edge of the board; the angular saw is thus brought into position to cut the dovetail exactly to the neceesary angle. After having made the downward cuts the same saw is used to make the cross cut; this is accomplished by inserting the blade in the angular downward cut in such manner that the angular part of the saw is made to cut straight across, whereby the root of the wood is removed, leaving the hole ready for the pin.

The pins are made by using a similar saw to the above, excepting that the part of the blade plate is turned up exactly at right angles to the blade, so that the cuts may be made in a straight line.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 19.—N° 551.

EDWARDS, WILLIAM.—(*Provisional protection only*.)—" Improvements in roughening the shoes of horses " and other beasts of draught and burden."

This invention consists in applying to the shoes of horses and other beasts of draught or burden studs or teeth of steel, steel iron, or iron, so attached as to be readily fixed or removed without the employment of nails or screws.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 19.—N° 552.

FAUCHEUX, RAOUL PAUL.—(*Provisional protection only*.)—" Improvements in reels or bobbins and in " means or apparatus to be applied thereto."

The invention relates to the application of means whereby any desired length of the thread or yarn may be removed from the reel or bobbin, whilst that left thereon is securely held from unwinding except when tension is purposely applied thereto.

One arrangement consists in placing around the reels or bobbins such as are now commonly in use a loose cylinder of cardboard or other suitable material upon which the thread or yarn is wound. The outer end of the thread is passed through an eye formed in one of the flanges of the reel or bobbin, such eye being covered with suitable flexible material.

Another arrangement consists in mounting the reel or bobbin upon a suitable axis provided with flanges, in one of which is formed an eye which is covered as above described. Or a piece of suitable flexible material is fixed to one of the flanges in any suitable position, and the thread or yarn is passed therethrough. Or a band or piece of suitable flexible material is stretched from one flange to the other, and the thread is passed through a slit knot or opening formed therein.

The invention also consists in applying around reels or bobbins a cylinder or tube mounted upon a suitable axis, such cylinder or tube being provided with an eye, as before described, and if desired the cylinder or tube may have an opening therein through which the color of the thread or yarn may be seen. Or an eye may be formed in a ring disc or bar mounted upon an axis upon which the reel or bobbin turns.

If desired more than one eye may be employed, in which case the thread or yarn will not require to pass through flexible material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 19.—N° 553.

LAKE, WILLIAM ROBERT.—(*A communication from Sigismund Beer*.)—" An improved process of seasoni " and preserving wood."

My invention consists chiefly in treating the wood with a boiling solution of borax in water which dissolv and removes all the perishable organic substances from the fibre and renders the same harder, impervious water, vermin proof, unaffected by atmospheric changes, and almost incombustible. The wood is placed a tank containing the solution and kept in the same from two to twelve hours, according to its porosity a thickness. The wood is then treated for a shorter time with a second quantity of the solution, and when d is ready for use.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 19.—N° 554.

DODGE, GEORGE POMEROY.—(*Provisional protection only*.)—" Improvements in the manufacture of ind " rubber valves, valve seats, and other similar articles."

The said improvements consist in manufacturing such valves and other articles of india rubber with interior web of elastic woven fabric.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 19.—N° 555.

DODGE, GEORGE POMEROY.—(*Provisional protection only*.)—" Improvements in packing for the stuffi " boxes of steam engines and for other like purposes."

My invention relates to elastic packing, consisting of india rubber and fibrous material combined. make such packing with a body or interior portion of hemp, jute, or other cheap material, and cover the sa with cotton, canvass, or duck.

A.D. 1868, February 19.—N° 556.

RENAULT, Félix Honoré.—(*Provisional protection only.*)—"An improved combined umbrella and walking "stick."

The combined umbrella and walking stick is composed of a tube of metal, wood, or other suitable material, enclosing an umbrella frame covered with silk or other tissue so arranged as to be easily withdrawn and mounted at the end of the tube in case of need.

[Printed, 8d. Drawing.]

A.D. 1868, February 19.—N° 557.

JONES, James Grafton.—"Improvements in machinery for exhausting air suitable to be used for ventilating mines and for other similar purposes."

This Provisional Specification describes an apparatus in the nature of a Barker's mill, but driven by power, and having a hood to take in air as the machine revolves, and this air is used as a blast to urge forward the current in the exhaust passage.

[Printed, 10d. Drawing.]

A.D. 1868, February 19.—N° 558.

GUINNESS, William Stuart.—"Improvements in sewing machines."

This Provisional Specification describes giving motion to all the parts of the machine by a pin carried by the end of a rod receiving motion from a crank on the driving shaft. Also a means of giving a large amount of slack thread at the time the shuttle is passing through the loop of the needle thread, and of simultaneously tightening and loosening the shuttle thread and needle thread. Also improved arrangements for feeding forward the work and also carrying the shuttle in a holder so that it shall be entirely independent of any face or way.

[Printed, 10d. Drawing.]

A.D. 1868, February 19.—N° 559.

LORD, John.—(*Provisional protection only.*)—"Improvements in apparatus for coupling and uncoupling "railway carriages and vehicles."

This invention consists in an arrangement of a coupling rod with hooks at its end to be applied to one end of a railway carriage or vehicle; this rod is made in three parts screwed together, the back having an easing spring, and the front end of the rod having the hooks, the back part also being screwed into the central part of the rod; a wheel or handle is situate on this part of the coupling rod. This is arranged so that it may be reached from the side of the carriage, and by turning it the carriage may be coupled by causing the hooks to take into staples, eyes, or hooks placed on the end of the carriage, which is brought end opposite to the carriage first mentioned, and by reverse action uncoupling will be effected.

[Printed, 4d. No Drawings.]

A.D. 1868, February 19.—N° 560.

JOSEPH, Lionel Barnet.—"Improvements in carriage and other wheels and tyres."

Struts between the spokes and the felloes ring or interior periphery of the wheels of carriages.

Making the tyre rounded in the central line and the edges flat.

[Printed, 6d. Drawing.]

A.D. 1868, February 19.—N° 561.

HENRY, Michael.—(*A communication from Emile Leon Dubrueil.*)—"Improvements in the manufacture "of nails, and in machinery or apparatus employed in the said manufacture."

The invention relates to nails with rounded, convex, or shaped heads such as are used in furniture and saddlery. In these nails by means of machinery a recess is formed in the blank from which the head is to be made to receive the point or shank. Two machines are used in which the parts are worked by cams. In one machine the blank for the head is cut, the recess formed, the shank cut, and head and point are forced together. A guide feeds the rod or wire for the shank or point, and rollers feed the strip for the head blanks, being actuated by an arm attached to an adjustable block or plate and to a bar with a cam end, bearing against a shoulder on a disc. The cutters for forming the points are carried on a block or plate, and actuated by levers or arms, and a cam restores the cutters to position. Nippers or holders keep the rod or wire steady while cut to form the point and while forcing it and the head together. A punch cuts out the head blank and brings it to the point or shank, so that it may engage in its recess, which is formed by another punch. The first punch cuts through the metal strip, in which a recess has just been formed by the other punch, and cuts out a blank for the head, which it lifts to the point, so that it engages in the recess. The other punch forms a recess in the strip for the next blank.

The other machine has a mould or die and a countermould for forming the head between which the head is struck up. The mould is carried by a piston or reciprocating rod, and the countermould adjusted by an inclined cotter. A feed arrangement is lifted and moved towards the countermould to bring the nail thereto; so that its head may be struck up by the mould or die. The nails drop through a guideway to nippers caused by rollers and cams to open and hold the shank till it passes into the countermould, when it is freed and the head driven home therein; the carrier being lifted clear while the die or mould acts and shapes the head. Another cam works pushers (one at the point and the other at the head) to expel the nail. The head can be shaped before the point and head are forced together.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, February 19.—N° 562.

MYERS, Walter.—(*Provisional protection only.*)—"Improvements in lockets, miniature bracelets, and " miniature brooches."

According to this invention the fastening of the locket or article is effected by two catches on the edges of the article, and the unfastening is effected by a key. One catch is fixed and the other is carried by a spring provided with an arm. In front of the locket or article is a keyhole, by inserting the key in which it may be made to act upon the arm of the spring catch so as to unfasten the catches and permit of the opening of the locket or article.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 20.—N° 563.

BAUER, Philip, JOHNSON, James, and JONES, William.—"Certain improvements in apparatus " to be employed for lubricating revolving shafts or axles."

The novelty and feature of the invention consists in the use of metallic or hard rollers all mounted on one spindle, which has springs applied to keep the bowls constantly in contact with the shaft, the bowls revolving in a chamber containing lubricant in the lower part of the bearing.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 20.—N° 564.

KILNER, James Maze.—"Improvements in bedsteads or sleeping accommodation principally intended " for military purposes."

I form the compartments by erecting planks in parallel rows, two or three deep, and sustain them on their edges by perpendiculars of flat bar iron; transversely through the planks and perpendiculars, rods are passed, which tie the structure together.

Ferrules preserve the required breadth of the compartments, and to these ferrules hammocks are suspended.

Field quarters of troops I form with the above surmounted by tent coverings.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 20.—N° 565.

WELDON, Walter.—"Improvements relating primarily to the manufacture of chlorine by means of " regenerated oxides of manganese, but partly applicable also to other purposes; being improvements in the " decomposition of chlorine residues, in the peroxidation of oxide of manganese recovered therefrom, in " the treatment of a bye-product of the decomposition of those residues, in the separation of sulphuric " acid and other impurities from the hydrochloric acid employed, and in apparatus and arrangements for " some of these purposes."

This invention has reference mainly to a process for the regeneration in the wet way of the oxides of manganese used in the manufacture of chlorine, for the first form of which Letters Patent were granted to the undersigned on the 26th of July 1866, and for improvements upon which further Letters Patent were granted to him on the 18th of January 1867, and again on the 4th of September 1867. The present invention consists in improvements in details relating to the practical working of the said process, which improvements are so numerous that the barest statement of them occupies fifty-two paragraphs in the accompanying Provisional Specification. It is therefore impossible, within the present limits, to say more than that they consist more especially in certain methods whereby magnesia from any source can be rendered available for the decomposition of chlorine-residues, in the systematic purification of such residues, in the separation, as described, of sulphuric acid and other impurities from the hydrochloric acid used, and of carbonic acid from the air employed, and in many new arrangements of apparatus and modes of procedure.

[Printed, 2s. 10d. No Drawings.]

A.D. 1868, February 20.—N° 566.

GOUX, PIERRE NICOLAS.—" Improvements in collecting and in disinfecting human excreta and converting " the same into manure, also in the apparatus or means employed therein."

The feature of novelty which constitutes this invention consists in collecting human excreta in suitable receptacles lined with any animal, mineral, or vegetable substances which operate as absorbents and disinfectants, whereby the immediate and complete absorption and fixing of the fertilizing gases and liquids contained in the fecal matter is effected, so that by the time the receptacle is ready for emptying, the contents will have been converted into a valuable manure suitable for immediate application to the land. As this lining is emptied out or discharged from the receptacle in company with the fecal matter those substances or absorbents which possess in addition fertilising properties of their own are preferred, as they augment the value of the manure. The substances employed as a lining are by preference rammed into the receptacle round a central removable mould or mandril, which is slightly tapered and provided with a handle at the top for facilitating its withdrawal.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, February 20.—N° 567.

JOHNSON, JOHN HENRY.—(*A communication from Jearum Atkins.*)—(*Provisional protection only.*)— " Improved means for increasing the draught in steam boiler and other furnaces or fireplaces."

This invention relates to certain means for increasing the draught in steam boiler and other furnaces or fireplaces, and consists in the employment of tapered or expanded smoke tubes or passages, the diameter of which increases towards the discharging mouth, arranged and combined together substantially in the manner hereinbefore described.

In applying this invention to a tubular boiler, for example, the boiler tubes in lieu of terminating in the smoke box tube plate as heretofore are made to enter or project some distance therein, and have their inner ends enlarged conically. The lower tier of tubes are made the longest, and extend nearly to the front of the smoke box, whilst each successive tier from the bottom is shorter than the tier next below in order to afford more space for the free exit of the products of combustion in their passage to the chimney; the prolongation or expanded part of each tube in the smoke box may either form a part of the boiler tube itself or it may consist of a separate expanded mouth piece fitted on to the end of each of the ordinary tubes. In combination or not with these expanding tubes it is further proposed to employ a group of expanding tubes situate in the lower portion of the chimney, just above the smoke box, the largest ends of the said tubes being at the top. In the centre of this group of expanded or taper tubes, which are supported at the top and bottom by two plates, there is situate the ordinary steam blast pipe, but in some cases the group of expanded tubes at the lower part of the chimney may be used alone without the blast pipe or expanded boiler tubes hereinbefore referred to. It is sometime proposed to employ in the lower part of the chimney a series of concentric tapered or expanded tubes in lieu of a group of separate tubes placed side by side, the blast pipe when used passing up the middle of the centre tube. The principle on which these expanded tubes act is as follows:—The smoke and gases in their passage through the tubes in the direction of their increasing diameter must, in order to fill the tubes, have their velocity retarded in a ratio corresponding to the increasing area of the tubes, and thus their momentum has to be overcome by the resistance of the atmospheric pressure at the larger end of the tubes, the force with which the gases in the tubes act against the resisting atmosphere tends to produce a vacuum in a smaller portion of the tube, and into this partial vacuum the gases from the fire rush with increased force, any diminution in the pressure in the tubes being equivalent to a corresponding increase of pressure in the fire box or furnace.

[Printed, 4d. No Drawings.]

A.D. 1868, February 20.—N° 568.

HULLETT, JOHN.—(*Provisional protection only.*)—" Improvements in aëronautical apparatus."

The novelty in this case consists, first, of an elevating apparatus for raising and supporting a line, cord, or rope in the air; and, secondly, of an apparatus for moving a frame and car up and along the said line, cord, or rope, the latter apparatus being self acting by the force of the wind or otherwize.

[Printed, 4d. No Drawings.]

A.D. 1868, February 20.—N° 569.

TATTERS, James Graham, KEEBLE, Walter, and NEWBERY, Benjamin.—(*Provisional protection only.*)—" Improvements in the preparation of cigars."

The cigars having been manufactured in the ordinary manner are prepared by dipping the ends at which they are intended to be ignited into a compound formed of gum, nitrate of potash, and finely powdered charcoal, or of other ingredients possessing equivalent properties. The cigars having been dried, the same portions thereof are dipped into a second compound, consisting of gum, amorphous phosphorus, and chlorate of potash, or of other ingredients possessing equivalent properties. The cigars are again dried, and when ignition is desired it is only necessary to subject the ends to a moderate amount of friction, when the external compound will be ignited and communicate its ignition to the composition firstly applied and thence to the cigar.

The novelty of this invention consists in providing cigars with means of ignition, as described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 20.—N° 570.

MURRAY, Thomas Andrew Lumsden.—" Improvements in rails for tramways."

The rails are corrugated or roughed to prevent horses slipping thereon.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 20.—N° 571.

NEWTON, William Edward.—(*A communication from William Farr Goodwin.*)—" Improvements in " mechanical movements adapted for use in clocks and watches, and wherever else it is desired to multiply " motion or to convert speed into power."

Two or more shafts are arranged in line with each other, one having a pivotal bearing in and receiving motion from the other within a concentric gear case or drum provided with internal gearing.

[Printed, 8*d*. Drawings.]

A.D. 1868, February 20.—N° 572.

DAVIES, George.—(*A communication from Joseph Antoine Broquin and Armand Lainé.*)—(*Provisional protection only.*)—" Improvements in taps."

The object of these improvements is to retard the closing of taps of any construction so as to prevent the shock or concussion in the pipe which is caused by the velocity of the water when the flow is suddenly stopped.

This result is obtained in two ways :—Firstly, by applying to the tap a pneumatic piston or diaphragm connected with the closing movement of the tap in such a manner as to tend to create a vacuum behind the piston and thus retard the closing of the tap.

And, secondly, in applying a " cataract " valve in like manner so as to increase the length of time occupied in closing the tap for the same purpose.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 20.—N° 573.

LAKE, William Robert.—(*A communication from James Andrew Bolton Higham.*)—(*Provisional protection only.*)—" Improvements in apparatus for shearing or clipping the wool or hair of sheep and other animals."

My invention relates to an apparatus provided with a rotary knife or cutter arranged to act in combination with a fixed comb, and geared in connection with driving mechanism operated by steam or other power. A toothed wheel geared into a pinion on the driving shaft and fitted to turn on a pin or stud fixed on the case of the apparatus is provided with two studs, which take into holes formed in the knife or cutter. The comb is formed of a steel plate which is attached to the case. A guard plate is provided to keep the hair or wool from passing beyond the comb.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 20.—N° 574.

LAKE, William Robert.—(*A communication from Andrew Thunder.*)—" Improvements in stoves or " furnaces for heating air."

My invention relates to an apparatus for heating air for drying grain and other purposes. The nature of the said invention consists chiefly in so constructing the apparatus that a current of cold atmospheric air may be conducted into flues passing around all the available surface of the same and then into a flue surrounding a heating pipe to absorb the heat. The said invention also consists partly in the peculiar arrangement of pipes whereby the heated air and products of combustion are utilized.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 20.—N° 575.

FENNELLY, Richard, and KENNY, Patrick.—" An improved method and apparatus for singeing off " the hairs, bristles, and other matters on pigs in order to prepare them for being converted into bacon."

According to this Provisional Specification a jet or jets of flame from a chamber containing ignited fuel and into which air is forced is caused to impinge on the carcass of a pig, which is raised and lowered, and turned about by mechanism provided for tbe purpose.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, February 21.—N° 576.

DAVIES, George.—(*A communication from Louis Charles Emile Vial.*)—(*Provisional protection only.*)— " Improvements in the manufacture of gas for lighting and heating."

This invention relates to the decarburation of gas and the dehydrogenation of ammonia, from which it is evident that the process employed is precisely the reverse of those heretofore known and in use for the production of lighting or carburetted hydrogen gases.

It consists in decomposing the gases by electricity or by superheating, either at the time of or after their production, and before or after their purification, either alone or with coke mixed with steam, or with coke only, or with iron, or with any other matter capable of reducing them.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 21.—N° 577.

BRIDGETT, George Alfred.—(*Provisional protection only.*)—" Improvements in steam engine slide- " valves, valve gear, and governors, parts of which are applicable to other purposes."

The features of novelty in this invention consist, with regard to slide-valves, in arranging bars across gridiron shaped valves, which are open right through, and which slide in steam-tight contact both on their upper and under surfaces in such a manner as that when the valve is at one end of its stroke, steam escapes into the cylinder port both over and under one of the bars, another of them preventing the escape of steam into the exhaust-port. When the valve is at the other end of its stroke the steam escapes from the cylinder into the exhaust port both over and under this latter bar, the former one shutting off communication with the valve-chest. The bars may be arranged to slide alternately over the cylinder port, or alternately beyond the scraped surface which surrounds it. The stroke of the valve by these improvements is reduced to one half of that of an ordinary single ported slide-valve. By making the cylinder passage terminate in two ports, two crossbars at one end of the valve sliding alternately over one port and two at the other end sliding alternately beyond the scraped surfaces which surround the other port, the stroke of the valve may be still further reduced. By one method of causing both sides of a slide-valve to work steam-tight I make them inclined to one another in a direction at right angles to the direction of the stroke of the valve; the cylinder face and a face on the valve-chest cover being similarly inclined, and the valve being guided by adjustable guides. Springs may be placed at the sides of the valve to compensate for wear. An additional casing door is provided at the widest side of the valve. By another method the valve is made in two parts, upper and under, the one steadied on the other by pins or otherwise; grooves in each part are made to coincide with grooves in the other, and india-rubber is inserted in the grooves to prevent leakage through the joint. The novel features with regard to valve-gear consist in actuating slide-valves by means of the following mechanism :—A broad rimmed cam driven at the speed of the crank-shaft acts on two bowls, one on the outside the other on the inside of its rim. The bowls are carried by a **U** shaped lever secured on a rocking-shaft, from which a lever arm operates the valve. The rim of the cam is so shaped that by moving the cam along its axis of rotation the point of the stroke at which the steam is cut off may be varied. Instead of using two bowls only one may be used, it being kept in contact with the cam by means of a spring or otherwise. The novel features as regards governors consist in the application to them of a clutch-box, one part of which will slip round in contact with the other; the one part being driven round and the other secured to the throttle-valve spindle. The one part is kept out of contact with the other by means of a spring when the engine has not excessive speed, but when it has the action of the governor overcomes the power of the spring and the clutch-box shuts the valve. When the parts of the clutch box are not in contact, the throttle valve is kept wide open by means of a spring, weight, or other contrivance.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 21.—N° 578.

BECKER, Lewis Matthews.—"Improvements in the manner of indicating the position and supply of "fire plugs, fire cocks, fire alarms, and for other purposes."

This invention consists of a mode by means of which the degree of fire plugs, fire cocks, and other fire extinguishing arrangements can be easily determined, also the locality of the same. Letters or other signs are affixed to an independent piece of glass, with an arrow or other indication and figures in feet or other measures underneath, pointing towards the locality of the object to be found; and when that object may not be opposite to a lamp a second similar arrangement is adopted by means of which the exact locality is immediately found. The colors of the symbols show the degree of the mains and services and the means of obtaining a ready supply of water for fire or other purposes. The glasses and signs are placed in the ordinary street lamps, or the signs are affixed thereto.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 21.—N° 579.

COCHRANE, Charles.—"Improvements in blast furnaces."

This invention consists in preventing the escape of gas from the top of blast furnaces on the opening and closing of the feed valve by closing in the top of the hopper above the valve by means of a cover having a number of doors, which are opened simultaneously to allow of the charge for the furnace being shot into the hopper, and are closed when the feed valve is lowered and raised for letting the charge into the furnace.

Explosion valves are provided in the cover for releiving any pressure occurring from an explosion of gas.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, February 21.—N° 580.

THOMPSON, Walkden, and STATHER, Thomas.—(*Provisional protection only.*)—"Improvements in "apparatus for washing and drying grain."

The features of novelty consist in the employment of revolving arms in a casing to facilitate the washing of grain; and in the employment of steam at a high pressure in dryers so as to heat the grain, which is delivered in a continuous manner among the steam and then passes into and through a compartment surrounded by a steam jacket containing an endless screw, and then into another compartment, which is perforated in order to cool the grain.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 21.—N° 581.

WALMSLEY, Henry, and TAYLOR, Thomas Walmsley.—(*Provisional protection only.*)—"A self "acting registering apparatus to register the number of persons entering into and on omnibuses or similar "vehicles plying for hire."

The novelty consists in,—

Connecting the step of such vehicles to any ordinary registering apparatus thereon, so that the number of persons entering the said vehicles may be indicated.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 21.—N° 582.

MENNONS, Marc Antoine François.—(*A communication from Thomas Maury.*)—"An improvement "in certain descriptions of bristle brushes."

This improvement consists in rounding off by a grinding process the angular ends of bristles in certain descriptions of brushes; the grinding may be effected by suitable stones, the ground points being afterwards polished and finished by a revolving wheel armed with bristles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 21.—N° 583.

ALTHAM, Thomas, CLARK, Jonathan, and RIDEHALGH, Spencer.—(*Provisional protection only.*)—"Certain improvements in machinery or apparatus employed for sizeing yarn termed 'tape legs,' being "also applicable to other similar machinery."

The novelty and feature of the invention consists in the novel application and use of an additional pair of "drag rollers" to those already used at the front or sizeing end of such machines as "tape legs" and "slashers," the additional rollers being so arranged and driven that one pair shall be of larger diameter than the other or revolve at a greater speed, so that the yarn enters the size slack or loose, and remains in such state whilst passing from the first pair of rollers to a "dip roller," which is placed in the size trough between the two pairs of "drag rollers."

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 21.—N° 584.

BURY, Thomas, and BURY, John Robert.—(*Provisional protection only.*)—"Improvements in shuttles "for looms for weaving."

This invention relates to the construction of shuttle pegs in such manner that the peg spring is expanded or in operation only when the peg is closed or in the shuttle, which is effected by means of a projecting end of the peg spring bearing on the shuttle spring when the peg is closed or down.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 21.—N° 585.

HEATLEY, Jesse.—"An improved construction of chimney pot."

Internal vertical air passages are formed in the chimney pots to create a draught.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 21.—N° 586.

NEWTON, Alfred Vincent.—(*A communication from William Farr Goodwin.*)—"Improvements in "reaping and mowing machines."

A novel arrangement of multiplying gearing is provided, and also means for allowing of the machines being converted at pleasure into a front or a rear cutter.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 21.—N° 587.

WILSON, William.—(*A communication from Freiderich Schauwecker.*)—"Improvements in apparatus for "lubricating the sliding valves and pistons of steam engines."

According to this Provisional Specification the varying pressure of the steam in the valve box or in the cylinder, when the engine is at work, is caused to pump the oil, through a capillary passage through which it will not flow by gravity.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 22.—N° 588.

DE METZ, Augustus.—(*Provisional protection only.*)—"Improvements in commode pots or vessels to be "used as waterclosets or for other purposes."

Placing commodes in gimball supports so as to render them level at any angle the ship, &c. may be at.

Applying papier machée or other (low heat conducting) material to the seats of commodes so that the seat shall not strike cold to the person using it.

Using slide valves instead of screwed taps to Weare's commodes (application for Letters Patent No. 2998 of A.D. 1867).

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 22.—N° 589.

MITCHELL, Robert Brightmore.—(*Provisional protection only.*)—"An improved method for making "plane irons, sheep shears, and other edge tools."

By making dies or swages so formed that they will weld, draw, and finish plane irons, sheep shears, and other edge tools, by affixing such dies or swages in the head and anvil of a hammer or stamp; also by cutting iron and steel (rolled or forged into suitable forms) into lengths, so that one or more tool or blade can be made from each piece and thereby effect a saving in labor and material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 22.—N° 590.

McCALL, John.—(*Provisional protection only.*)—"An improved mode or process of preserving meat."

The meat is first dipped in a solution of sulphite or bisulphite of soda or potash, and is then dried by the smoke of wood or other material containing creosote.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 22.—N° 591.

GALLOWAY, Charles John.—(*Provisional protection only.*)—" Improvements in wrought iron and steel " piles, pillars, and columns."

This invention has reference to wrought iron and steel piles or pillars that have heretofore been made of two halves rivetted together by means of longitudinal flanges, and consists in dispensing with the flanges and securing the two halves together either by hoops only, or by having undercut tongues upon the edges of the one half fitting into corresponding grooves or rebates in the edges of the other half, or the edges of the halves are made to overlap and are rivetted or bolted together.

For securing lengths of piles or pillars end to end, either separate flanges are fixed on by means of annular projections fitting into corresponding recesses on the inner surfaces of the lengths, or a core having annular projections is forced into corresponding annular recesses in the contiguous ends of two lengths, or strips of metal rivetted to the one length are made to project into the other length, and are secured by keys driven through slots in the latter.

Or a cylindrical core is employed upon which the meeting ends of the lengths fit, or an external sleeve, which is drawn over the meeting ends; slotted holes are formed in each part, so that by driving keys through them the ends are drawn together.

Caps with projections fitting into or on to the ends of the piles, &c. are fastened by keys driven through slots formed in both parts.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 22.—N° 592.

LAKE, William Robert. — (*A communication from George Washington Wood.*) — " Improvements in " machinery for supplying type forms in printing presses with various coloured inks for each impression."

The colours are transferred by means of intermediate rollers from ink fountains to adjustable segmental plates which revolve on a central shaft and transfer the colours in bands to the type roller. Adjustable reglets are employed whereby plates of proper width may be arranged for any desired width and position of the bands of colour. The rollers and plates are connected by mechanism whereby each series of plates is caused to receive only its own proper colour. The distributing rollers act continuously during the operation of the press.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, February 22.—N° 593.

NEEDHAM, Joseph.—(*Provisional protection only.*)—" Improved fastenings for gloves, boots, and other " articles."

To one side of the slit or opening in the glove or other article a small lever is at tached or jointed; on the opposite side of slit is a button-hole, through which the enlarged or projecting end of the lever is passed, so that on drawing the lever upward the button-hole side of the slit or opening may be caused to slide along the lever until it reaches and is held by a part thereof, which is formed somewhat in the manner of a ratchet tooth.

Or a piece or light bar of metal is attached to each side of the slit or opening, and a ring or slotted piece circumscribing the two bars is employed, so that by moving it along the bars the two edges of the slit or opening may be drawn towards each other.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 22.—N° 594.

NEWTON, Alfred Vincent.—(*A communication from William Henry Nobles and Milton Vorse Nobles.*)— (*Provisional protection only.*)—" Improvements applicable to steam boiler and other furnaces."

The invention relates, first, to apparatus for returning the gases of combustion back to the fireplace and discharging the cinder by a continuous action from the ashpit. Secondly, to utilizing the heat radiating from furnaces and steam generators.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 22.—N° 595.

ASTON, James Jones.— (*Provisional protection only.*) — " Improvements in machinery or propellers " applicable for the propulsion of ships, boats, and other vessels on and over the water."

Propulsion without floats or paddles by metal disc plate rings or wheels. Improvements on Patent relating to propulsion to same invention of 17th December 1858, No. 2892.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 22.—N° 596.

NEWLANDS, Benjamin Edward Reina.—(*Provisional protection only.*)—" Improvements in treating " spent oxide of iron or oxide of iron which has been used in gas works or otherwise to separate sulphur " from sulphuretted hydrogen, and in the purification of sulphur obtained from such oxide of iron."

This Provisional Specification describes the treating with bisulphide of carbon spent oxide from which sulphur has been separated by means of naptha, mineral oils, benzole, or turpentine to fit such oxide to be re-used. Also a process for separating ammoniacal and cyanogen products from oxide treated as above described. Also the fitting spent oxide to be burnt for the manufacture of sulphuric acid by treating it with a solution of sulphur in bisulphide of carbon. Also the purifying of sulphur separated from spent oxide by means of naptha, mineral oils, benzole, or turpentine, by treating it with bisulphide of carbon. Also when sulphur has been extracted from spent oxide by means of bisulphide of carbon, the precipitating the sulphur by adding to the solution naptha, mineral oils, benzole, or turpentine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 22.—N° 597.

RYLAND, William Hawkes.—(*Provisional protection only.*)—" Improvements in fastenings for articles " of dress and jewellery."

According to this invention a bow is jointed to one edge of the body of the fastening and a small chamber is fixed to the opposite edge of the body. Working in the said chamber is a sliding snap pressed outwards by a small block of vulcanized india rubber. On shutting down the hinged bow its free end passes through a hole in the chamber described and enters a hole in the snap, the edge of which hole engages with a notch or depression in the free end of the bow and thereby fastens the said bow to the body. By pressure on the projecting end of the snap outside the chamber the bow may be released from the snap and raised from the body.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 22.—N° 598.

SANGSTER, Francis.—(*Provisional protection only.*)—" Improvements in parasols and umbrellas."

This Provisional Specification describes the making parasols with ribs of unequal lengths, with ribs unequally spaced, and with stretchers of unequal lengths. It also describes a flat topped parasol. The invention is also applicable to umbrellas.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 22.—N° 599.

LAKE, William Robert. — (*A communication from George Washington Shawk and Job Franz.*)— " Improvements in electrical signal or alarm apparatus."

My improvements relate to apparatus wherein a bell is struck by a hammer fixed on a lever whose length may be varied to give greater force to the blow. The said lever is operated by means of an electric current acting through two magnets placed one on each side of the fulcrum of the lever which carries suitable armatures opposite such magnets. An adjustable cushion or buffer is arranged behind the hammer to prevent recoil.

I construct my improved apparatus so that the circuits of a number of local batteries can be made or broken by making or breaking the main circuit, the wires of which connect all the instruments. A pair of helical magnets in the main circuit operate an armature carrying a platinum point arranged opposite a similar point on a post. When these two points are in contact the local circuit is complete in all the instruments and the bell hammer is operated by the current in the local circuit.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 22.—N° 600.

IRTH, Samuel.—" Improvements in machinery for cutting coal, stone, or other minerals."

This Provisional Specification describes arranging the picks used in machines for cutting coal and other minerals so that any number of picks may be worked in the same breadth of roadway as is required for one pick.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 22.—N° 601.

ICOLL, Elizabeth Jewel, and **ABLETT**, Thomas Mark.—(*Provisional protection only.*)— " Improvements in waist springs for boots and shoes."

We attach the spring at the sole end of the waist, rivetting it for that purpose to a metal plate at one end perforated round its edges, by which it is sewn to the inner sole at one end, the other end being free and unconfined except by the thicknesses of leather above and below and bearing on the centre of the heel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 22.—Nº 602.

KRUTZSCH, William.—(*A communication from Oscar Schimmel.*)—"Improvements in cleaning or washing "clothes and in the machines used therefor."

This invention relates to certain improvements in machines for carrying out the twofold operations of washing and rinsing clothes, such machines being adaptable for being worked either by hand or motive power.

In carrying out the first portion of the said invention, which relates to the *washing* of clothes, I construct the machine for the said purpose as follows:—The lower main portion of the framing of the machine is provided with flanges, to which is secured the bottom of the washing vessel. On a transverse axis at the top of the framing of the machine two washing "hammers" or "beaters" are suspended; the lower part of the said beaters is formed by preference of wood, and is ridged or corrugated to facilitate their kneading action upon the clothes. The two washing "hammers" reach the bottom of the washing vessel within a space of about 1¼ inches, the said space being filled up or occupied by tongue pieces projecting from the under surface of the lower part of the "beaters," and which take into or work in corresponding indentations formed in the bottom of the washing vessel, which is divided into two chambers or compartments in which work the "hammers" or "beaters," to which motion is given, and they are caused to work by the action of two cranks, the pins of which work in sliding blocks which by the action of the cranks when put in motion are each caused to play or move up and down in a slot formed in the stem of the lower portion of the "hammers" or "beaters" which are caused to move back and forth in the channels formed in the bottom of the washing vessel through an arc of a circle equal to the throw of the cranks, which are so set that the working points thereof strike four times separately in every revolution, so as to equalize the consumption of power. The two washing chambers are provided each with a lid, through which the clothes having been previously soaked are introduced into the machine as also soap, water, or suds. In the interior of each chamber is an inclined board provided at the lower end with an elastic flap piece formed of india rubber or other suitable elastic material so as to prevent the clothes from slipping into and getting entangled amongst the cranks and upper portion of the "hammers" or "beaters" and also to confine the froth and suds.

The "hammers" or "beaters" act within the washing chambers as pistons travelling in a reciprocatory manner in the path of an arc of a circle at the curved bottom of the washing vessel. Warm water is introduced through a pipe pierced with small holes in a finely divided state into the washing chambers containing the clothes or articles to be washed.

An indicator and alarum arrangement of apparatus may be fitted to washing machines according to this invention so that a given number of revolutions of the machine indicated on the dial and announced by the alarum show that a certain weight or amount of clothes have been washed sufficiently, and are ready to undergo treatment according to the second part of this invention, which relates to the *rinsing* of clothes.

In constructing according to this invention the smaller kinds of washing machines when intended to be worked by hand power, though the form of the lower portion of the "hammers" is retained as is also the same radial reciprocating traverse thereof within the washing vessel, the arrangement of cranks and other actuating and power increasing parts used for the larger classes of washing machines according to this invention are not adopted, and the omission of the said parts renders also unnecessary other internal fittings of the last mentioned class of machines.

In carrying out the second part of the said invention, which relates to the *rinsing* of the clothes which have previously been operated upon in the washing machine, I construct a vessel made of wood or other suitable material of a circular or oval shape so as to allow of the free and rapid circulation within it of currents of water; in the centre of the vessel is placed a partial divisional piece rounded at each end, leaving a clear space between each of such ends and the interior of the vessel. Working in bearings formed respectively in the partial divisional piece just referred to and one of the sides of the rinsing vessel is a shaft carrying vanes or blades so that upon the shaft being driven it is caused to revolve and with it the blades mounted on it so as to act upon the water contained in the vessel as an impelling fan, and thus cause the water to be circulated freely and forced among the clothes immersed for the purpose of being rinsed free from the soap suds which remain in them on being removed from the washing machine. At one end of the rinsing vessel is a sluice valve arrangement, which serves as an overflow to regulate the height of the water in the rinsing vessel, and also for draining or drawing off the water therefrom.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, February 22.—N° 603.

IELD, Richard.—"Improvements in the manufacture of cut nails."
ention consists in making cut nails from hoops or strips of wrought iron or homogeneous iron or
dges of which are rounded or are bevilled either on one or both sides. Nails cut from hoops or
e kinds described have either semicircular points or V shaped or diamond point or points which
n one side of the nail. The said nails are thereby more readily driven than nails provided with
y flat or chisel points.

8d. Drawing.]

A.D. 1868, February 24.—N° 604.

RLAIN, Humphery, CRAVEN, John, and WEDEKIND, Hermann.—(*Partly a communica-*
Friedrich Hoffman.)—(*Provisional protection only.*)—"Improvements in the burning of bricks,
nent, and other like substances, and in the kilns employed therein."
ention relates to certain modifications of or improvements in the kilns for burning bricks, lime,
d other like substances, for which Letters Patent were granted to Alfred Vincent Newton, bearing
2nd of December 1859, N° 2918, and to Humphrey Chamberlain, John Craven, and Hermann
, bearing date the 24th of June 1864, N° 1596, and has for its object the simplification of the con-
of the kilns, rendering them more suitable for contractors and temporary works, whilst at the same
e steam and products of combustion are more rapidly carried off a better quality of burned goods
and greater economy of fuel effected. According to this invention it is proposed to combine with
ructed on the principles set forth in the Specification of the Patents hereinbefore referred to a
orced combination obtained by the employment of a fan blower or exhauster situate on the outer
rcumference or on the top of the burning chamber of the kiln, and dispensing with the use of the
ney and smoke chamber. In one modification a stationary fan communicates with a continuous
d round the outer or inner circumference of the kiln, from which flue passages are formed
it with the divisions of the kilns, such passages being opened or closed by air tight dampers in
equired. Air is either forced into the division containing the cooling bricks or is exhausted from
n containing the green bricks, and in either case the draught is caused to circulate throughout the
he divisions, except those which are being either emptied or filled. In another modification we use
fan and dispense entirely with chimnies, flues, smoke chambers, and valves or dampers, the fan
ly connected direct with any one of the several divisions through the ordinary doorway, or through
pening if preferred, and is to be removed from time to time to a fresh division. As the fire
he air may either be forced in behind the fire, in which case it will pass off through a moveable
e temporarily fitted on to the feed holes or man holes, the position if this smoke pipe being
s the fire proceeds; or the air may be exhausted from the front of the fire if preferred, the heat
ted for the purpose of supporting the draught, as is the case with ordinary draught chimnies, it is
at a considerable saving of fuel in this respect will be effected. Should the air as it leaves the
und to be of an elevated temperature its heat may be utilized by being forced through separate
mbers of flues.

, *4d.* No Drawings.]

A.D. 1868, February 24.—N° 605.

James Wren.—(*Provisional protection only.*)—"Improvements in machinery for preparing
e fibre."
ovisional Specification describes two surfaces set with fine teeth which alternately approach and
n each other, and the fibre to be operated on is placed between them. When the surfaces are
gether their teeth penetrate the fibre and overlap, and when they are furthest apart there is a
le space between them, and by means of blades the fibrous material is cleared from the teeth, and
of the teeth it is moved forward.

, *4d.* No Drawings.]

A.D. 1868, February 24.—N° 606.

R, Augustus.—"Improvements in umbrellas and parasols."
ention consists in the adaptation and application to the manufacture of umbrellas and parasols of
cloth" in either a satin twill or serge texture, by the use of a cotton warp of superior quality and
of thread so as to produce the required transparency when seen against the light, and a woollen
reference of Silesian wool also selected with care in order to effect the same object as in the case of
warp.

The texture of the material so produced is adapted to prevent the ready absorption of wet when in use as applied to umbrellas and parasols.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 24.—N° 607.

HANCOCK, Philip Henry, and FRENCH, Joseph Paxton.—" Improvements in printing machines."

The invention relates to applying to cylinder printing machines means for facilitating the delivery of the printed sheets. For this purpose the sheet in the rotary motion of the impressing cylinder for delivery is received between a nipping roller and a series of tapes which conduct such sheet on to arms with stops to regulate the position of the sheet thereon, and which arms then have motion given to them to deliver each sheet on to a receiving table.

Motion is given to the nipping roller and the rollers carrying the tapes by other tapes passing partly round the impressing cylinder. The receiving arms have motion given to them from the inking table by a stud thereon in the traverse of that table acting in the fork of a lever, which by a connecting rod actuates a segment of teeth gearing into other teeth carried by the axis of the arms.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 24.—N° 608.

GISBORNE, John Sacheverell.—(*Provisional protection only.*)—" An improved mode of and means or " apparatus for indicating a ship's course and preventing collisions at sea."

The object, to enable persons on board ship to ascertain with certainty at night the course an approaching or distant ship is being steered. For this purpose I employ as a mode of exhibiting certain coloured lights corresponding to the position of the rudder, the motion of the rudder itself, or of the mechanism used to move the rudder.

The motion is transmitted from the rudder or parts used to move it by hydraulic or pneumatic pressure or by wires, rods, or other mechanism to rotate or move the lantern in which the light is placed, or a screen surrounding the lantern.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 24.—N° 609.

MACINTOSH, John, and BOGGETT, William.—" Improvements in the manufacture and application of " elastic goods or fabrics."

This Provisional Specification describes improved means of making a fabric elastic by puckering, gathering, or crimping it previous to combining it with india rubber or with a compound of india rubber and paraffin or stearic acid (described in the Specification of a Patent granted to John Macintosh, dated March 12th, 1866, N° 748), which is called rubber.

In making leggings or spatter dashes, leather or knitted or looped tubular fabrics of suitable length are employed, which are drawn on or attached to moulds of the shape of the human leg. Another part of the invention relates to the production and application of improved elastic cords or laces for boots and shoes or gaiters in place of leather or other non-elastic materials.

This invention also relates to the making of elastic fabrics by coating fibrous materials with soft rubber or a solution of rubber.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 24.—N° 610.

FORDRED, John, LAMBE, Frederick, and STERRY, Arthur Charles.—" Improvements in the " treatment of paraffine."

Paraffine rendered liquid by heat is subjected either without or after being treated by acid to the action of glutinous or kindred substances with which it is intimately mixed, or to fuller's earth or kindred substances to remove the impurities. It is also subjected to cold and hot hydraulic pressure, and the paraffine absorbed by the fuller's earth is removed by washing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 24.—N° 611.

NEWTON, William Edward.—(*A communication from Charles Musier Taintor.*)—" Improvements in the " manufacture of illuminating gas."

This invention consists in distilling the coal at a low heat and converting the distillate and condensable products into gas in separate benches or retorts.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 24.—N° 612.

NICHOLLS, Richard.—"A new or improved combined material or fabric to be applied to the manufacture "of bags, reticules, writing cases, wristbands, cuffs, collars, belts, and various other articles."

This invention consists in the production of a new combination of material or fabric applicable to various purposes, such as for covering bags or writing cases, for wristbands, collars, or belts, for trimming dresses, for covers of books or fancy boxes, card cases, purses, and other similar applications.

Leather, either plain, enamelled, or embossed, of any desired color is to be combined with paper, card, or cotton, silk, or linen fabric by means of an adhesive solution, such paper or fabric being printed by chromolithography with colored patterns or devices, and afterwards treated with a coating of gelatine or white spirit varnish. Thus a material is produced without sewing or stitching and capable of forming a variety of application, its strength being sufficient to afford the attachment of buckles, studs, or other fastenings.

[Printed, 4d. No Drawings.]

A.D. 1868, February 24.—N° 613.

DRACOPULO, George Sinefi.—(*Provisional protection only.*)—"A new apparatus for raising or forcing "water, applicable to ships, mines, and other purposes."

According to this invention the power of compressed air is applied by a pipe to a jacket surrounding a receptacle placed at the bottom of a ship or mine, from which receptacle a main tube ascends to the desired height; perforations are made in the receptacle for the inlet of water, which is then raised by the force of the air up the tube and escapes by an exit pipe.

The compressing apparatus may be worked between decks or in a cabin of a vessel, or on the surface of a mine.

[Printed, 4d. No Drawings.]

A.D. 1868, February 24.—N° 614.

LAKE, William Robert.—(*A communication from Robert Wilde.*)—(*Provisional protection refused.*)—"Improvements in steam boilers and in feed water apparatus for the same."

The said improvements relate to the peculiar construction of steam boilers, to the mode of effecting intercommunication between three or more boilers when the same are arranged one above the other, and to the method of supplying the said boilers with water.

[Printed, 4d. No Drawings.]

A.D. 1868, February 24.—N° 615.

BODMER, Rudolph, BODMER, John James, and BODMER, Louis Rudolph.—"Improvements "in the manufacture of artificial stone, and in machinery to be employed therein."

The principal feature of novelty consists, firstly, in forming a new cement or cementing compound by grinding lime or cements, or both combined, together with a certain proportion of slag or stone in a dry state, and subsequently mixing such cementing compounds with coarse sand, slag, or broken stone, and employing this mixture as concrete or in the manufacture of artificial stone in various ways.

Another part of our improvements applies to hydraulic brick presses, and has for its object the insuring a more uniform supply to and filling of the moulds, and also to the employment of a bottom cylinder without the use of separate valves and cam.

[Printed, 1s. Drawing.]

A.D. 1868, February 24.—N° 616.

LAKE, William Robert.—(*A communication from Hosea Wait Libbey.*)—"Improvements in artificial "breasts."

The said invention relates to breast forms so arranged that the front part is made of elastic material and attached to a rigid base in such a way as to render the part inflatable by any convenient means. It is also designed in some cases to fill the said forms with sponge or some other fibrous or textile material, or elastic sacks, or capsules filled with air may be suitable for the purpose in which the form may or may not be inflated at the option of the wearer. I design also to construct the nipple of the forms with a tube and valve, by which the forms may be inflated, and through which the air may be expelled, designing to construct and arrange the forms and their attachments in any manner substantially as set forth to obtain the same object.

[Printed, 8d. Drawing.]

A.D. 1868, February 25.—N° 617.

DEFRIES, Henry.—(*Provisional protection only.*)—" Improvements in the manufacture of opal or glass " lamp and gas globes, chimneys, and shades of every description."

This invention consists,—

Firstly. In moulding devices or patterns upon the pillars or curved projections of globes during the manufacture of such globes instead of producing the ornamentation by cutting after the globe is made.

Secondly. In making lamp or gas chimneys with pillars or curved projections, and moulding devices upon such pillars or upon the plane surface of a chimney unfurnished with pillars.

Thirdly. In ornamenting glass or opal lamp or gas shades by making them with pillars or curved projections, and in moulding patterns upon these pillars, or in moulding designs upon shades with plane surfaces.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 25.—N° 618.

VEVERS, Joseph.—(*A communication from Joseph Nussey.*)—(*Provisional protection only.*)—" Improvements in spinning and twisting machinery."

This invention consists of a spindle upon the top of which fits a heavy metal cap, to which is connected a ring; a "traveller" runs around such ring. A tube connected with or forming part of a driving wharl receives the bobbin, and passing the thread from the bobbin through the "traveller" and upwards I accomplish what I term " up spinning."

[Printed. No Drawings.]

A.D. 1868, February 25.—N° 619.

LE ROY, Ferdinand.—(*Provisional protection only.*)—" An improved non-conducting composition for " preventing the radiation or transmission of heat or cold, and an improved method of applying the " same."

The improved non-conducting composition is prepared by mixing and combining brick clay with powdered charcoal, sawdust, fuel sweepings, cow hair, cocoa nut fibre, wheaten flour, yeast or other fermentable substance, residues from the conversion of starch into sugar, water, and cotton foot oil. The composition is then submitted to a certain heat so as to cause fermentation.

In some cases hoop iron is employed in combination with the improved composition.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 25.—N° 620.

ELCE, John.—" Improvements in lubricating the spindles of machines for spinning and doubling."

My invention consists in making the rails of the machines above referred to concave to collect and distribute the lubricating material; also in applying a strip of flannel in the concave recess to act as a filter; also covering the recess by a rail to hold the bobbin above the rail and to prevent the waste of lubricating material; also in making a groove in the spindle to allow the lubricating material to run into the footstep.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 25.—N° 621.

HUGHES, Edward Thomas.—(*A communication from Thomas Burlock de Forest.*)—" Improvements in " the manufacture of hoop skirts."

This invention relates to improvements in the manufacture of hoop skirts, and consists,—

First, in enclosing one or more flat elastic wires within a covering, the said covering being of greater width than the spring and sized and pressed so that while it confines the spring to its proper position within the covering it gives to the spring the appearance of being made from a much broader wire than it really is, and also consists in the peculiar ornamentation of the springs; and, lastly, in securing the springs to a vertical tape by means of a metallic fastening passing through both the vertical tape and the material covering the spring.

[Printed, 8*d*. Drawings.]

A.D. 1868, February 25.—N° 622.

HUTCHINSON, Edward.—" Improvements in the construction of multiple drilling machines."

My invention consists in so constructing multiple drilling machines with a double traversing motion (a) the frame which carrys the drills is capable of being traversed or moved from front to back with stopping the machine, thus allowing the drilling of holes to be performed in different portions of the same article without moving it, or the drilling of holes in the said article during a continuous movement of it through or past the machine; and (b) each drill can be moved laterally without interfering with the others or stopping the machine; holes can thereby be drilled at regular or irregular distances apart. My invention consists also (c) in the employment of disengaging clutches for stopping and starting each drill in machines provided with the said double traversing motion; and (d) in providing feed motion of a novel construction for each drill spindle separately, which said feed motion is applicable to drilling machines generally.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, February 25.—N° 623.

HUTCHINSON, Edward.—" Improvements in the construction of planing machines."

In planing machines constructed according to my invention, instead of causing part of the machine to travel as hitherto has been the practice, I cause the article or articles to be planed to move continuously in one direction, and employ as the planing or cutting tool a revolving disc fitted with steel cutters on its side or face. When it is desired to plane two edges or surfaces at the same time I employ two revolving cutters, which I can adjust at any desired distance apart.

The article or articles to be planed are passed between and caused to move by one or more pairs of rolls provided with adjusting set screws or other means; motion is given to one or more of these rolls from any convenient power, and thereby the said article or articles are moved through at a speed equal to the planing power of the revolving tool or tools.

These planing machines can be advantageously used in combination with the multiple drilling machine patented by me simultaneously with this.

[Printed, 10*d.* Drawing.]

A.D. 1868, Feburary 25.—N° 624.

PIGOTT, George West Royston.—" Improvements in coated or covered wire,"

The novelty consists,—

Firstly. In the coating or covering wire with tin, fusible alloy, or copper, and then glazing or varnishing it with any solution or liquor of an adhesive and drying nature, or in glazing or varnishing it in its simple annealed condition with such solution or liquor.

Secondly. The covering wire prepared by the above or any of the above processes with yarn of cotton, silk, or other fibre, either alone or with one or more longitudinal strands of fibre or yarn.

Thirdly. The drawing wire of an oval or sectoral form to be coated with or by any of the above processes.

[Printed 4*d.* No Drawings.]

A.D. 1868, February 25.—N° 625.

DOBBS, John, and DOBBS, William. — (*Provisional protection only.*) — " Improvements in the " ventilation of hats and similar coverings for the head."

In the ordinary leather band near the forehead a number of transverse slots or spaces are formed, between which are placed pads of felt or other material connected to a ribbon, cord, or wire, by which means the pads can be moved to cover the slots partially or entirely, or leave them fully open.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 25.—N° 626.

HARRISON, Joseph John, and HARRISON, Edward.—(*Provisional protection only.*) — " Certain " improvements in the healds of looms for weaving."

The healds are formed of thin flat metal ribbon indented by a die or other suitable arrangement so as to form depressions on the flat side of the ribbon through which the yarn of the warp is drawn.

At each end of the heald small loops are formed by bending the ribbon over and then soldering it, so as to attach the ribbons to the shafts to form the healds.

[Printed, 4*d* No Drawings.]

A.D. 1868, February 25.—N° 627.

DAVIES, Joseph Crawford, and ZAHN, Edward.—(*Provisional protection only.*)—" Improvements " in muffs."

Our invention consists in applying gauntlets or half gauntlets to muffs for giving additional warmth to the arms of the wearer. These gauntlets are connected to the muff by elastic bands or otherwise, and are made to slip in and out, or they may remain out.

Also in applying a purse to the muff.

Also in fitting inside the muff pieces of quilted silk or other material, which fill up the ends of the muff when the hands of the wearer are withdrawn, thereby converting it into a bag.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 25.—N° 628.

REMY, Ferdinand.—"An improved steel seat or chair."

The seat proper and the back of a seat or chair are each made from a single piece of steel plate punched out into the desired form, then stamped or shaped on a mandril into a convex form, and finally tempered. The seat proper and the back thus made are then secured to the frame of the seat or chair. A particular mode of securing the seat proper to the frame is described.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 25.—N° 629.

McLEOD, John.—"Improvements in apparatus for washing yarns."

This apparatus is of the kind in which the hanks of yarn are carried by reels through a trough. The reels have a slow progressive motion and a rapid reciprocating rotatory motion. The trough is made with two parallel straight portions which are united by a semicircular part at one end. There is an endless series of the reels, which are connected together and moved progressively by an endless chain or band that is distended by pulleys on vertical shafts at each end. The reciprocating rotatory motion is imparted by means of pulleys fixed on the reels and which rest on straight rails which have a longitudinal reciprocating motion. In some cases the two straight portions of the trough may be made quite separate, and the apparatus will in these cases constitute a double machine.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 25.—N° 630.

KENT, John Thomas. — (*Provisional protection refused.*) — "Improvements in the manufacture of "mattresses."

Instead of making the mattresses flat or of the same thickness throughout, as now practised, I propose to make them thinner at the edges and gradually thicker towards the centre, so that when such a mattress is laid upon a bedstead having iron laths or sacking bottom (and consequently sinking in the centre) the upper face of the mattress instead of being concave or hollow towards the centre as heretofore presents a level surface, whilst its under side fits into and follows the curve of the bottom of the bedstead.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 25.—N° 631.

OLLIVIER, Oscar.—(*Provisional protection only.*)—"Improved apparatus and means or method for "exhibiting advertisements and affording publicity thereto."

According to this invention a board or card is provided with a flap or cover on each side, under which a series of leaves of paper are arranged bookwise for the purpose of recording names and addresses, the surface of the flaps containing divisions for the insertion of advertisements. The intermediate portion of the board or card filled up with an almanack, engraving, or design, and advertisements.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 25.—N° 632.

JAQUET, John Lewis. — (*A communication from George Beatty.*) — (*Provisional protection only.*)— "Improvements in heels for boots and shoes."

I make boot and shoe heels of metal, cast hollow, and provided round the bottom with a raised rim to resist wear. Countersunk holes are provided in this rim for the screws serving to attach the heel to the boot or shoe.

The upper edge of the heel is bevilled to adapt it to the form of the sole, while it is further secured thereto by means of pins or spikes on the heel driven into the sole leather.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 25.—N° 633.

PIEPER, CARL.—(*A communication from Carl Gotthelf Fischer.*)—(*Provisional protection only.*)—"Improvements in machinery for grinding or preparing wood for the manufacture of paper."

This Provisional Specification describes grinding or preparing wood for making paper by means of a grindstone having blades projecting somewhat beyond its grinding surface. The blades detach small portions of nearly uniform size from the wood, which are further reduced by the grinding stone.

[Printed, 4d. No Drawings.]

A.D. 1868, February 25.—N° 634.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Alexander Friedman.*)—"Improvements in apparatus for raising and forcing water and for feeding steam boilers."

According to this Provisional Specification apparatus is constructed with the view of realizing on a novel principle the effective power of steam issuing from a boiler of any known construction at any pressure, and this object is effected by allowing the steam to act gradually on the water, and gradually diminishing the velocity of the steam, and transferring the power gained out of each lessening of the velocity to the body of water to be set in motion, as also by effecting a gradual and thorough condensation of the steam by allowing it to act at intervals upon different separate lots of water, and thus obtaining several distinct and perfect times of direct contact between the steam and the water to be propelled.

[Printed, 2s. 10d. Drawings.]

A.D. 1868, February 25.—N° 635.

PIEPER, CARL.—(*Provisional protection only.*)—"Improvements in reaping machines."

According to this Provisional Specification cutting blades are fixed around the bottom of a conical frame with a vertical axis driven by bevilled gear from the axle of the driving wheels. Exterior to and concentric with the cutter frame is another revolving conical frame having on its side a number of radial arms, and at its lower end is a ledge over the ring of cutters. The standing crop is cut by the revolving ring of cutters, and it is then, whilst still erect, passed on to the ledge of the outer conical frame and between the radial arms. Inclines at the side of the machine guide the crop on to a receiving board, when it falls over, and it is then discharged in sheaves. Steering apparatus is also described.

[Printed, 4d. No Drawings.]

A.D. 1868, Ferbuary 25.—N° 636.

KERR, ROBERT.—(*Provisional protection only.*)—"Improvements in the method of and apparatus for heating conservatories and other similar houses or structures."

The feature of novelty which constitutes this invention is the special mode of and the construction of apparatus consisting of a vessel with pipes or passages in it through which steam or hot air or gas passes, and surrounded by water or other liquid for the purpose of producing aqueous vapour charged or not with other substances, as the equivalent of a moist and warm atmosphere, whereby the injurious effects of an anhydrous artificial atmosphere as hitherto employed are avoided.

[Printed, 4d. No Drawings.]

A.D. 1868, February 25.—N° 637.

BIRCHALL, ARTHUR MILSOM.—"Improvements in the manufacture of twist tobacco, and the making of the same into rolls, and in the machinery or apparatus employed therein."

This invention relates, firstly, to the use of machinery for making twist tobacco and for spinning and coiling the twist; and, secondly, to machinery for making the twist into rolls. Under the first head of this invention the leaf is rolled up so as to form a continuous length of twist by the employment of continuous mechanical travelling surfaces, either flat discs or endless bands or aprons, between which the leaves are fed in; one surface being caused to travel across or at an angle to the other. The twist is then taken up by a positive take up motion, consisting of a grooved pulley carried by a flyer, such pulley having the twist passed round it, and being caused to revolve and take up a certain definite length of twist for each revolution of the flyer. The flyer winds or coils the twist on to the wheel round which it revolves, and this wheel or reel receives a longitudinal to and fro motion to enable the twist to be evenly laid or coiled thereon. In forming the roll under the second part of this invention, two revolving disc plates are employed, between which the twist is lapped or folded and coiled upon itself until the proper sized roll is produced. These discs are carried on spindles or shafts rotated or driven by gearing or otherwise, and are furnished with pins for holding or supporting the roll between them; they are, moreover, provided with slots made radially therein for facilitating the application of the "bass" or other binding material employed for holding the coils or laps together during the operation of forming the roll. The roll is subjected to end pressure from time to time whilst being made, such pressure being derived from a screw spindle working through a stationary nut and actuated by a hand wheel or otherwise, such screw spindle tending to force together the disc plates between which the roll is made. When complete, the roll is removed by first removing one of the disc plates from its spindle and then withdrawing the pins.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, February 25.—N° 638.

RAMSEY, Robert, and COOKE, John.—" Improvements in signal indicators applicable to mining " and other purposes."

The main dial of the apparatus is marked with numbers, letters, or words, according to any desired code, the pointer being attached to the spindle of a ratchet wheel and revolved by means of a volute spring. The ratchet wheel is acted upon by a catch attached to a "catch-bar," which also actuates the hammer of the bell, and is worked by the signal wire or bar (which is operated from the place whence the signal is communicated), a "back-catch" being placed so as to gear into the ratchet wheel and hold the same in position after it has been revolved and until the "catch-bar" is ready again for action. The "catch-bar" is brought back to its normal position by means of a spring, the force of which is transmitted by a lever connected with a cataract of oil or other liquid, which lever retains the cataract bar after action until by the next signal being given it liberates the same, thus allowing the cataract spring to put the "back-catch" out of gear, and letting the ratchet wheel slip back to zero. The cataract is set by a suitable catch upon the lever, and acts against a spiral spring in the cylinder in which the liquid is contained.

The registering portion of the indicater consists of as many additional dials as may be required, the same being placed concentrically upon a mandril and brought back by volute springs. The motive power bringing them into action in rotation is a pin on the lever, along which traverses a small "catch-bar," which is self-acting by means of the cataract bar over their respective ratchet wheels, of which each has its own small "back-catch" so connected with the main "back-catch" that they are not released when actuated by the cataract, but allow the whole to go back to zero when re-adjusted automatically.

The novelty of this invention consists in the combination of mechanism employed.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, February 26.—N° 639.

MACKROW, George Colby.—(*Provisional protection only.*)—" Improvements in the construction o " batteries for ships of war."

My invention consists in constructing the batteries of ships of war with faces or angular parts placed forty-five degrees from a fore and aft line, and in providing the said faces or angular parts with gun port I thus attain the object of my invention, namely, that the guns in such ports may be trained through angl of ninety degrees and upwards, so that even with two guns working in conjunction a converging fire m be obtained in any direction, either ahead, astern, or broadside.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 26.—N° 640.

LYTHGOE, Thomas, and THORNTON, Harry.—" Improvements in the construction of walls, floo " and roofs for buildings in which concrete and iron are used, and in apparatus employed therein."

Our invention consists in lining the frames for building concrete houses with a compound having a ha and smooth surface; also in applying an inner frame within the outer frame to make the outer surface concrete walls of a fine cement; also in making ribs or projections on the frames to produce surfaces imitation of stone or with ornaments or mouldings; also in improved modes of connecting the fra together and supporting the scaffolding; also in the employment of T iron in constructing floors and roo of concrete.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 26.—N° 641.

POCOCK, Lewis, the younger.—(*Provisional protection only.*)—" An improvement in bookbinding."

The invention consists in so binding the books that the title or other lettering on the back thereof sh be inverted or upside down with regard to the writing or printing in the interior of the book; the books a then placed in the rack or on the shelf in a reversed position, so that the title or lettering on the bac thereof is non-inverted, and the consequence is that when the books are taken down from the rack or shelf on to a table or desk they may be opened at once and the contents referred to and the books replaced without turning over.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 26.—N° 642.

HILL, THOMAS.—(*A communication from John T. Buen.*)—"Improvements in bearings for axles and "shafts."

The invention consists in making the rubbing surface of the bearing with grooves of a peculiar configuration adapted to secure the contemplated objects, and which configuration is to be modified to suit the position or situation of the axle or shaft. The grooves are by preference formed by casting the metal alloy or material of the bearing in the axle-box, or cap or piece which is to hold it, and upon a mandril or core formed with suitable counterpart ridges.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 26.—N° 643.

LAIDLAW, ROBERT, and THOMSON, JOHN.—"Improvements in apparatus for exhausting gas, for "blowing air, for pumping or forcing liquids, and for measuring liquids."

The improved apparatus comprises two revolving cylinders working against each other in a case and having their axles geared together outside of the case by spur wheels. One of the cylinders has two or more propelling plates bearing continually against the inside of the case or against the other cylinder, and the latter has two or more grooves in it to allow the propelling plates to pass. The case is provided with an inlet and an outlet on opposite sides of the line of contact of the two cylinders.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 26.—N° 644.

WALKER, EDWARD ROSS.—(*Provisional protection only.*)—"Improvements in transmitting motive power "to potters' machinery."

The invention consists in driving the machinery by means of water under great pressure; also of mixing substances with the water to lubricate the machines or to prevent the water from freezing easily; also of shortening the stroke of the engines so as to economize the consumption of water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 26.—N° 645.

GEDGE, WILLIAM EDWARD.—(*A communication from Eugène Anduze.*)—"An improved machine "intended to divide, break, or crush all substances capable of being triturated, more especially bones "and horny substances of every kind for converting them into manure."

This machine consists of a fixed upper and a movable lower plate or runner each provided with a crown carrying quadrangular and conical teeth set thinly towards the centre of the crown and closer progressively towards the exterior, the teeth of top and bottom crown fitting very exactly into each other. The runner is keyed on a vertical shaft, which also passes through the fixed plate to maintain these plates in proper juxtaposition.

The bones, horns, or other substances to be divided or crushed are introduced by a hopper through a hole in the upper fixed plate on to the centre of the runner, which rotates at a speed of about 700 revolutions per minute, and being first broken between the thinly set teeth of the centre of the crowns it passes successively through the closer set teeth until it issues on the exterior in small broken pieces and powder.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 26.—N° 646.

PERRETT, JOHN.—"Improvements in bottles and apparatus for feeding infants."

According to this Provisional Specification a hemispherical cup is formed in elastic material with a nipple upon it to resemble the breast. The cup is sprung over the open mouth of a glass or other vessel by preference of a horn like shape.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 26.—N° 647.

NEWTON, ALFRED VINCENT.—(*A communication from Laban Clarke Stuart.*)—"Improvements in electro-"magnetic apparatus."

Utilizing the induced currents of electro-magnetic apparatus by adding it to the currents obtained directly from the battery.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 26.—N° 648.

LAMBE, Frederick, STERRY, Arthur Charles, and FORDRED, John.—"Improvements in "purifying hydrocarbon oils."

Hydrocarbon oils and spirits are subjected after being treated by acid to the action of glutinous or kindred substances with which they are intimately mixed or to fuller's earth or kindred substances to remove the impurities therefrom.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 26.—N° 649.

MITTONNETTE, Frederick.—(*Provisional protection only.*)—"Improvements in furnace doors."

This invention refers to the construction of furnace doors with a series of chambers through which the air admitted to the top of the fire passes and becomes warmed before reaching the fire, thereby producing combustion of the smoke.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 26.—N° 650.

NEWTON, William Edward.—(*A communication from James Turner, Robert Turner, Archibald Turner, Malcolm Clarke Turner, Thomas Clarke Turner, and George Moscript Turner.*)—"A new and improved "washing machine."

An upright cylindrical revolving tub with vertical wings or feathers is placed within a stationary tub, and is driven by bevil wheels. A vertical shaft with arms and vertical feathers is driven in the opposite direction.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 26.—N° 651.

DOWELL, William, and DOWELL, James.—(*Provisional protection only.*)—"Improvements in locks."

This invention consists of the following mechanism for closing the keyhole of the lock during the shooting or withdrawing of the lock bolt, and for preventing the shooting or withdrawal of the bolt. To the bolt of the lock a sliding plate is affixed, and under the front of the lock case is a similar sliding plate connected with the back plate by pins. Each plate has two holes in it corresponding in size with the keyhole, and the said plates are so acted upon that when the bolt is shot one of the holes is opposite the keyhole, and when the bolt is withdrawn the other hole is opposite the keyhole. The keyhole is thus closed on both sides, excepting when the bolt is wholly shot or wholly withdrawn, and the use of a picklock is thereby prevented. To the case of the lock a spring arm or lever is jointed, the free and bent end of which engages with a slot in the end of the back plate described when the bolt is withdrawn, and bears against the end of the back plate when the bolt is shot. The bolt cannot therefore be shot or withdrawn until the arm or lever is raised. The raising of the arm or lever is effected by the key acting on the front covering plate described, and causing a stump on the said plate to act on a roller on the arm or lever and raise the said arm or lever.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 26.—N° 652.

GAUNT, Reuben, and GAUNT, John William.—(*Proisional protection only.*)—"Improvements in "spinning and twisting machinery."

The objects of this invention are by its arrangement to render a "fly" frame readily convertible into a "cap" frame, as well as to produce smoother yarns. For this purpose the "flyer" is inverted and its legs secured to the wharl, which is bushed and free to slide up and down, the spindle being raised up and allowed to descend by the lifter rail. A tube, the lower end of which is flanched and the upper end closed, rests upon the upper end of the spindle, which is conical. Upon such tube the bobbin (or paper tube when such is used) is placed, and thus the flyer and wharl ascend and descend in lieu of the bobbin. It will be apparent that this arrangement may readily be altered to a "cap" frame.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 27.—N° 653.

WIRTH, Francis.—(*A communication from Edward Zachariae.*)—"Improvements in pedals and damping "apparatus for pianofortes."

My improved apparatus, which may be applied to all pianos, has the purpose to free the construction of them of a hard defect. The pedals were hitherto so imperfect that by them only the whole damping could be at once removed from the strings and in the same manner be let down upon them. This was followed by a thousand bad consequences, and a great many musical ideas could not be carried into execution upon the piano; the field of composition was strictly limited. My improved pedal does at once away with all those defects, rendering the piano a decidedly more perfect instrument. By the aid of my invention, which I call the great pedal of artists, the whole damping is divided into eight parts, which can be used independant and be put into motion at pleasure, either all at once or after one another. The mechanism, the principle parts of which lie below on the bottom of the chest of the piano close behind the lyre, can be put to every piano already finished without changing in the least its style of building. The lyre of the "great pedal of artists" has four pedal steps, the fore parts of which are broad and flat, being close to each other, and are generally so formed that the foot can take and move only one pedal step just as well as also two of them (lying at the side of one another) at a time. By the operation of this new system both feet are put to work and every one has to govern two pedal steps. All pedal steps have a movement not only upwards but also downwards. The movement of every pedal step is divided in several parts, called stations, the foot being able not only to raise but also to press down every step in three different stops, which the foot feels very well. Both of the feet are ordinarily placed under the pedal steps upon a stepping board, which regulates the position of the feet so accurately that a gentle motion of the top of the foot produces an effect. The four pedal steps work like double armed levers by means of brass bars upon four double armed wood levers, which transfer the motion to a large lever lath lying behind the lyre on the bottom of the piano chest. This large lever lath consists principally of two boards joined behind and pressed asunder in front by inlaying wire springs, but are again held together to a certain measure by adjusting screws, The whole lever lath is divided into six parts, so that we have indeed six single spring lever laths. These are put in such a close connection with each other by screw hooks and iron bars that one little lever lath after it has been raised one station by the wood lever in farther moving seizes another lever lath or several others of them and takes it or them along in its way while it compresses itself like a valve. The six exterior lever laths are joined by staffs with eight lever laths, which lie in the interior of the piano and act upon the dampers. When an exterior lever lath is raised it acts only (at the first station) by the first motion of the pedal step independent upwards upon a certain number of dampers. In farther moving it stands firm above and operates by compressing itself only laterally upon other lever laths, and these again transfer the operation farther on. So there is produced by the co-operation of some essential little by lever laths and ausiliary levers so various a variation of the single divisions of the damping that it is possible to content every desire of the artist.

[Printed, 1s. 10d. Drawings.]

A.D. 1868, February 27.—N° 654.

DUMAS, François—" Improvements in bathing dresses for the treatment of skin and other diseases."

The bathing dress the subject of this invention is composed of a waterproof trousers and vest in one or more pieces, having cocks at the extremities which cover the hands and feet, and with the addition of a hood with glass face and breathing tube when to be used for taking a vapour bath, and also provided with a funnel for the introduction of the liquid forming the bath.

The liquid or vapour is introduced between the dress and the skin of the wearer, and when the bath has been taken is withdrawn by opening the cocks at the extremities.

Parts of this dress, such as leg, arm, or vest, may be used for local applications.

[Printed, 8*d*. Drawings.]

A.D. 1868, February 27.—N° 655.

COOPER, Joseph Rock—" An improvement or improvements in breech-loading fire-arms."

This invention consists in applying to breech loading fire arms a spring or spring arm carrying a bevilled stud for enabling the fire arm to be loaded with the muzzle end of the barrel raised. The said spring or spring arm is situated by preference under the breech chamber or shoe of the gun, and the stud when the cartridge is in its place in the barrel projects through the bottom of the breech chamber and springs behind the rim of the said cartridge and holds it in its place. The said spring stud is pressed down on introducing and withdrawing the cartridge by the rim of the cartridge bearing on the end of the stud.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 27.—N° 656.

HOPE, Ralph Alfred.—" A machine for adding sweetening and other ingredients to aërated, mineral, " and other beverages."

The machine consists of a combined force pump and tap or cock having a slotted handle which gives motion to the pump plunger, the whole being so arranged that by moving the handle backwards and forwards supplies of the beverage and sweetening or other ingredient in the proper respective proportions are admitted into and mixed together in a channel, passage, or chamber provided for the purpose, from whence they are forced into the bottling apparatus.

[Printed, 1*s.* 8*d.* Drawings.]

A.D. 1868, February 27.—N° 657.

BLOCKSAGE, Thomas.—" Certain improvements in the construction of boilers or steam generators."

The novelty and feature of the invention consists in dividing the flues or passages by a horizontal or transverse partition extending across and from end to end of the flues, and the said partitions may be of metal, fire clay, or other suitable material, and having either flat, convex, or other shaped surfaces as may be found most effective, the effect of such partitions being to receive the dust and dirt and prevent it accumulating on the bottom of the flue and so forming a non-conductor of heat, and also by drawing the flame into the lower part to cause direct contact of the flame with the bottom of the flue.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 27.—N° 658.

WALKER, Charles Clement, and WALKER, William Thomas.—" Improvements in centre valves " for gas purifiers and other apparatus."

The improvements relate to horizontal centre valves for purifiers and other apparatus used in gas works, rendering them much more efficient and perfect in their action and working than heretofore. One of the chief novelties in the invention is the self acting apparatus stopping the motion of the valve at the exact time and position required.

Also the mode of connecting the centre spindle with the valve for prevention of straining or springing off its faces, and the mode of constructing the centre pivot to avoid friction or labour in rotating.

[Printed, 10*d.* Drawing.]

A.D. 1868, February 27.—N° 659.

GREEN, Robert Ellis.—(*Provisional protection only.*)—" Improvements in the preparation of cotton " yarns or fabrics intended to be dyed with madder or a preparation of madder."

The cotton is first saturated with a sufficient quantity of oil or a preparation of oil as if intended for the usual mode of preparing it for the Turkey red process; it is then submitted to the action of steam or superheated steam in a vessel or chamber, after which it is washed with soap or alkali in the usual manner before applying the usual mordant.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 27.—N° 660.

BOYCE, Lawson.—(*Provisional protection only.*)—" An improved mode of raising and lowering Venetian " blinds."

A roller is employed, to which one end of an endless band is fastened and coiled around in one direction, and the other end of the band is fixed to the roller so that it can coil in the reverse direction.

By pulling the band in one direction the blind is raised, by pulling it in the contrary direction the blind is lowered.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 27.—N° 661.

WHITELEY, Joe Booth.—(*Provisional protection only.*)—" Improvements in machinery for stretching " and drying or finishing woven fabrics."

The novelty consists in,—

The application of eccentrics, rods, and catches to operate ratchet wheels and give motion alternately to the chain-wheels, and in arranging the said chain-wheels to run loose on the shaft so that alternate intermittent motion may be given to each endless chain.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 27.—N° 662.

WELDON, Walter.—" Improvements in the regeneration from chlorine residues of oxides of manganese " suitable for use again in the manufacture of chlorine, and capable of being applied also to other " purposes."

This invention consists, firstly, in peroxidizing in the dry way, either in the cold or under the influence of heat, and either by means of atmospheric air or of any convenient oxidizing gas or compound or mixture of gases, or of any solid oxidizing agent, protoxide or other low oxide of manganese recovered from chlorine residues by means of magnesia; secondly, in decomposing chloride of manganese and peroxidizing the resulting oxide by furnacing together either chloride of manganese and chloride of magnesium or chloride of manganese and magnesia; thirdly, in completing in the dry way the peroxidation of oxides of manganese which have been partially peroxidized in the wet way; fourthly, in systematically purifying the chlorine residues from which oxides of manganese are to be regenerated in the dry way; fifthly, in certain methods of washing such oxides; sixthly, in submitting protoxide or other low oxide of manganese to prolonged boiling in order to facilitate its subsequent washing; seventhly, in separating adherent liquor from oxides which are to be peroxidized in the dry way by means of centrifugal hydro-extractors; and, lastly, in using the oxides produced under this invention in the manufacture of chlorine and in that of glass, for the production of manganates and permanganates, as a source of free oxygen, and for all other purposes for which native oxides of manganese are available.

[Printed, 6*d*. No Drawings.]

A.D. 1868, February 27.—N° 663.

ADAMS, JOHN, and BARRETT, HENRY.—" An improved stopper for bottles."

This improved stopper is made of metal, and is constructed by fitting a collar formed in halves on the neck of the bottle, on which is screwed a short cylinder provided with a cap moving on a hinge, and secured when shut down by a spring lever fastening. An india rubber disc or washer is placed in the cap for securing an air tight joint, and a hole closed by a valve opening inwards is made in the top of the cap, through which the bottle is filled.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 27.—N° 664.

NEWTON, WILLIAM EDWARD.—(*A communication from Elisha Waters, George Thacher Balch, Clarence Weed Waters, and George Arthur Waters.*)—" Improvements in the construction or building of boats or " vessels."

The entire shell or skin and the decks (where used) of boats are made of paper laid on a wooden model prepared for the purpose.

[Printed, 6*d*. Drawing.]

A.D. 1868, February 27.—N° 665.

NEWTON, WILLIAM EDWARD.—(*A communication from John Thomas Price.*)—" Improvements in pens " and pen and pencil holders."

A pen semi-concave and semi-convex is attached to a metal tube to be put on the finger to write with.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 27.—N° 666.

PETRIE, JOHN, junior.—(*Provisional protection refused.*)—" Improvements in machinery for washing wool " and other fibrous materials."

This invention consists, firstly, in a combination of travelling surfaces and rakes for removing the material from the washing trough. Secondly, in the use of a travelling surface in connexion with prongs which advance into the material and retire therefrom. Thirdly, in the employment of a roller furnished with vanes for transferring the washed material from lifting cylinders to delivering surfaces.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 27.—N° 667.

BASS, JOHN HOLMES.—" Improvements in double cans or vessels to contain liquids or substances which " it is desired to protect from the influence of external temperature."

According to this Provisional Specification the external part of the double vessel is formed of sheet metal with a suitable mouth at the top, around which on the inside a socket is formed, the neck of the inner vessel fits into this socket, there being an elastic ring between them to produce a tight joint without there being any contact between the metal of the two cases; the space between the cases is filled with non-conducting material, and a bottom is then fixed on to the outer case.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 27.—N° 668.

BULLIVANT, WILLIAM MUNTON.—(*Provisional protection only.*)—" An improved composition for " preventing the fouling of iron and other ships' bottoms and for preserving metal and other surfaces " generally."

In preparing my improved composition I take of,—

Red lead - - -	about 43 pounds.
Beef suet - - -	,, 85 ,,
Wax - - - -	,, 14 ,,
Pitch - - - -	,, 43 ,,
Brimstone - - -	,, 172 ,,
Arsenic - - -	,, 4 ,,
Russia tallow - - -	,, 85 ,,
Rosin - - -	,, 64 ,,
Blue butter - - -	,, 10 ,,

the same to be mixed and boiled together, and the resulting composition applied in a hot state with a brush or trowel to the surfaces to be preserved or coated either to the hulls of iron and wood ships or metal, wood, or other surfaces generally, such as stonework, pierheads, jetties, telegraph posts, submarine cables, and otherwise.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 27.—N° 669.

ELDRIDGE, GEORGE, and LOE, WILLIAM CLARK.—(*Provisional protection only.*)—" Improvements in " the means of closing or stoppering bottles and vessels for containing aerated and other liquids or " fluids."

We make the neck or mouth of the bottle or vessel with channels communicating with their contents.

We further close the bottle or vessel by means of a hollow stopper also provided with channels or openings corresponding with those in the neck or mouth. This stopper has an elastic seat, the lower edge of which is secured to the stopper, while the top edge, when the stopper is in its place, fits in a recess in the neck or mouth so as to prevent the removal of the stopper, which is at same time free to be rotated to make the channels of the neck or mouth and stopper coincide for introducing or emptying the liquid or fluid.

Bottles or vessels so stoppered are applicable for containing aerated and other liquids, wines, varnishes, or spirits.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 27.—N° 670.

HART, GEORGE.—(*Provisional protection only.*)—" An improved mode or method of and apparatus for " effecting the consumption or prevention of smoke in steam boiler and other like furnaces."

Preventing smoke by directing jets of highly heated air into the unconsumed gases as they pass over the bridge. This air is heated in pipes or passages situate in or near to the flues and furnace.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 28.—N° 671.

CHRISTIE, JOHN.—(*Provisional protection only.*)—" An improved lithographic printing machine by " means of an endless tympan and self-acting gripping scraper to be worked by hand, steam, or other " power."

The using of an endless tympan and self-acting gripping scraper to be worked by hand, steam, or other power.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 28.—N° 672.

MILLS, RICHARD.—(*Provisional protection only.*)—" Improvements in machines for washing, wringing, " and mangling textile fabrics," the novelty of which mainly consists in the use of a vessel under the rollers containing a board with converging channels, or a brush for rubbing the fabrics upon, and the use of levers, rods, and springs acting on the top roller of the machine by wheels and screws so as to vary the press for wringing and mangling, the object of the combination being to save time and labour and vary t pressure on the rollers to suit the most delicate fabrics or the strongest apparel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 28.—Nº 673.

EY, James.—"Improvements in coupling, driving, and retarding locomotive, carriage, or other
ls on railways or for other purposes."
coupling and driving apparatus consists of a crank or cranks and connecting rods in or near the
f the axles between the wheels, combined with centre and side coupling rods, in order to utilize the
of the train so as to increase the tractive power of the engine.
wheels are also coupled by means of driving gear working on self-adjusting centres so as to allow an
shaft to revolve freely at various angles whilst the pulleys or drivers are working parallel to each
The universal joint centres are by preference constructed on the principle of a ball and socket, with
pins or studs to give motion to the pulleys or other driving gear.
els with radial or articulated axles or bogies may be coupled by this means.
retarding apparatus consists of metal bands or clips applied to the wheels by means of rods and a
y rotating ring loose on the axle worked by a lever, such bands or clips being of sufficient elasticity
ase themselves on the withdrawal of pressure; also the breaks are suspended from a bracket resting
h axle-box or fixed to the springs, by which arrangement the springs are allowed free action, and the
may be applied to radial wheels.
inted, 1*s.* Drawing.]

A.D. 1868, February 28.—Nº 674.

ER, James George.—" Improvements in waterclosets, lavatories, and urinals, and in regulating
lies for same by water valves."
novel features of this invention are in the forms and construction of watercloset pans, there
ge valves, stench traps. Also a variety of forms of water supply valves, stop valves, and the gearing
ry for working same.
ited, 4*s.* 6*d.* Drawings.]

A.D. 1868, February 28.—Nº 675.

KER, Alexander Southwood.—" Improvements in machinery or apparatus for the manufacture of
or covers applicable to bottles and other vessels, and in the construction of such or other caps or
s."
tional machinery to that heretofore patented by me, compound or other caps or covers for bottles, to
them more effective than those heretofore made, as explained in my Provisional Specification of this
ate.
nted, 8*d.* Drawing.]

A.D. 1868, February 28.—Nº 676.

ARD, Richard.—" Improvements applicable to taps and cocks for various useful purposes."
rding to this invention a hollow conical plug or washer of gutta percha, metal, or other material is
to the barrel of the tap and intervenes between the periphery of the bung hole and the tap, thus
ing leakage and rendering the insertion of the tap into the barrel or cask a matter of no difficulty.
ated, 6*d.* Drawing.]

A.D. 1868, February 28.—Nº 677.

MAN, Clinton Edgcumbe.—(*A communication from Jean Baptiste Lhote.*)—" Improvements in the
afacture of moulds for moulding glass or like material."
lds are made from the material which is formed in gas retorts and known as "carbon" or "graphite"
rrosion;" this is pulverized and then agglomerated by a binding material; or it is used in its
state, being simply cut and worked to the form of the mould. For large articles several pieces of it
united to get a sufficient size for the mould.
ated, 8*d.* Drawing.]

A.D. 1868, February 28.—Nº 678.

OCK, James.—"Improvements in paving for streets, roads, and ways."
ing paving of blocks or pieces, with holes formed therein for the purpose of ensuring better foothold.
ving might be laid on longitudinal sleepers and hot pipes placed underneath to provide against
ctionable effects of frost and snow on the surface. This paving is described as very superior for
s.
ited, 1*s.* Drawings.]

A.D. 1868, February 28.—N° 679.

ROBINSON, John.—"Improvements in the method of cleaning and preventing deposits accum
" upon the surfaces of feed water heating apparatus employed in boilers for generating steam, and
" apparatus connected therewith."

The novelty and feature of the invention consists in preventing the accumulation of deposits be
incrusted upon the surfaces of the pipes of "fuel economizers" by an arrangement of "caliper sc
and the novel application of "alkalies," the former being employed to prevent incrustation forming u
exterior surfaces of the pipes, and the "alkalies" preventing the incrustation and accumulation of lim
their interior surface, the combination of which keeps the said pipes in a thorough efficient state for con
heat to the water passing through the same to the boiler.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 28.—N° 680.

DUNKERLEY, Joseph.—"Certain improvements in the method of manufacturing hats or coveri
" the head, and in apparatus employed therefor."

The novelty and feature of the invention consists, first, in so arranging the apparatus in which th
enclosed that a space may be left therein in a certain position so that steam, gas, or other heat may be
only to that part of the brim which is to be "curled."

Secondly, in the novel application and use of a metallic or other suitable "brim curling template" o
which is varied in shape according to the shape of brim required, the use of such template being to
its form to the brim.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 28.—N° 681.

THOMAS, George.—(*Provisional protection only.*)—"Certain improvements in sewing machines."

The novelty and features of the invention consists,—

First, in so arranging the upper framing of the machine that a portion shall project and extend o
eccentric arm so as to form an enclosed guard or cover for the upper portion thereof.

Secondly, in applying back and front plates to the side plates or bearings situated at each side of th
pulley for the same purpose; and,

Thirdly, in applying to the said front or back plate an adjustable lever or finger which by comin
contact with the strap prevents it turning in the reverse direction.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 28.—N° 682.

WARREN, Thomas.—(*Provisional protection only.*)—"Improvements in glass furnaces."

This invention relates to the kind of glass furnace described in Pocheron's Patent of 1866 (N° 129
consists in arranging in the cave beneath the tank a series of tubes or flues for the passage of air, whic
thence to the inner ends or other parts of the grates or fire chambers. These air tubes or flues are e
in chambers which receive the waste gases by flues leading down to them from outlets in the side
tank, whilst other flues lead the waste gases up again to the cone above, with which arrangement the ne
draught is maintained.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 28.—N° 683.

LOW, James Fairweather.—"Improvements in apparatus for preparing jute and similar
" materials."

This invention consists principally in adapting to preparing apparatus certain improved m
appliances for holding the fibrous materials whilst conveying or feeding them progressively thro
apparatus. The improved holding appliances comprise a drum or cylinder mounted so as to revolv
in contact with a shell or casing, and between these pass the parts of the fibrous materials by whic
materials are held, whilst the remainder projects or hangs out from the end of the drum, by the slow re
of which it is gradually carried across the space wherein it is acted upon by the scutching, hackling,
preparing apparatus. The fibrous materials are laid transversely on an endless apron arranged to fee
in between the holding drum and casing, and a similar endless apron receives them at the other en
casing. Two or more of the holding drums may be used, the fibrous materials passing in contact wi
in succession. The surface of the holding drum may be corrugated, pinned, or otherwise formed or
increase its hold upon the fibrous materials.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 28.—N° 684.

TROTMAN, THOMAS.—"Improvements in the construction of doubling-up or folding carriages and "chairs."

The sides and body of the carriage or chair are made rigid, and a folding platform or frame to carry the seat is hinged thereto.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, February 28.—N° 685.

NEWTON, WILLIAM EDWARD.—(*A communication from John Hill Prentice.*)—" Improved apparatus for "drying and finishing felted goods and fabrics."

A cone that is mounted on a hollow shaft is made to rotate, and is filled with steam by means of a tube passing through the hollow shaft. By this means the article mounted on the cone is thoroughly dried.

[Printed, 8*d.* Drawing.]

A.D. 1868, February 28.—N° 686.

SANDERSON, CHARLES.—" Improvements in the manufacture of iron and steel."

By causing a blast of air to pass over the surface of molten metal the gaseous impurities arising therefrom are oxidized and carried out of the furnace.

[Printed, 6*d.* Drawing.]

A.D. 1868, February 28.—N° 687.

WHILOCK, THOMAS SMITH, and HARFORD, HENRY.—(*Provisional protection only.*)—" Improvements "in fastenings for window sashes."

This invention consists of fastenings situated at the sides of the channels in which the sashes work. Each fastening consists principally of a sliding bar pressed inwards by a spring, the said bar working horizontally through the beading of the channel, and forming a continuation of the beading. On the inner face of the sliding bar are two pins or studs which are made to engage with any two of a series of holes made in the inner side of the sash, and thereby fix the sash in its closed position or open position. A small bolt fixes the sliding bar. By withdrawing the bolt and pulling the sliding bar outwards the sash may be raised, and on loosing the sliding bar its pins engage with the sash and fix it. The sliding bar is then fixed by the small bolt.

[Printed, 4*d.* No Drawings.]

A.D. 1868, February 28.—N° 688.

GJERS, JOHN.—" Improvements in the manufacture of cast steel and homogeneous iron and in furnaces "applicable thereto."

Malleable iron be it more or less steely is melted with a proportion of manganiferous iron ore or pure iron ore mixed with pure manganese ore, the necessary flux and an excess of carbon or carbonaceous matter. By preference the iron or steel to be melted is coated with such mixture, which for that purpose may be made into a grout with water; but it is preferred to employ a bituminous, fatty, oily, or analogous fluid substance or substances, or such as under the influence of heat give off hydrocarbons and leave a carbonaceous residue, in all cases regulating the mixture and the quantity or thickness of coating to suit the material under treatment in order to arrive at the desired carbonization and temper as nearly as possible.

The prepared material may be melted in crucibles or on the bottom of a reverberatory furnace as heretofore practised, preferring to use a continuous melting steel furnace, for which purpose a Siemens' regenerative gas furnace formed with a deep receptacle to contain the fluid steel is provided with vertical or inclined tubes or retorts made of material capable of resisting great heat, and so arranged as that having been filled with prepared material they will act as so many continuous crucibles being filled with fresh material at top as that already melted runs out at bottom.

Such continuous melting tubes, retorts, or crucibles may be advantageously employed in connection with other arrangements of furnace capable of giving the requisite heat, and besides being used for the materials proposed either in a coated or uncoated state they are applicable to the melting of other materials or mixtures of materials intended for making fluid steel or homogeneous iron.

[Printed, 2*s.* 10*d.* Drawings.]

A.D. 1868, February 29.—N° 689.

COCHRANE, CHARLES.—(*Provisional protection only.*)—" A new or improved appliance for hot blast "water tuyeres."

This invention consists in the insertion into tuyeres, between their surfaces and that of the blast pipe, of a tapering cylinder of refractory material, such as burnt fire clay, by which means the cooling effect of the circulating water upon the blast is almost entirely prevented.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 29.—N° 690.

BAKER, Edwin—"Improvements in the formation and application of screw bolts."

This invention consists in forming the head of a screw bolt eccentric to its pin, over which is applied a collar of metal or other material having an eccentric hole, and over this another collar of elastic material.

In fastening two plates together the bolt head is passed through them, then turned until its eccentric comes over the plate, where it is held by its stem while the nut is screwed up, drawing the eccentric to its proper bearing, compressing the elastic collar, and thus forming a perfectly air, steam, and water tight joint.

Also in the application of an elastic collar to fixing a bolt not having an eccentric head. In this case a circular groove or recess is formed under the head of the bolt to receive the edge of the elastic collar, and when the nut is screwed up the collar expands into a flange or washer between the head and the plate, securing the bolt from withdrawal and forming a perfect joint.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 29.—N° 691.

WILDER, Henry Beaufoy.—"Improvements in magnetic electric telegraphic apparatus for signs, letters, " or sentences, with bell and self-acting mechanical switch."

The novelty consists of constructing the sender in a most simple and effective manner through producing currents of electricity caused by revolving a simple iron plate with notched edge (divided in equal spaces and projections) on and off the tops of two small electro magnets fixed upon the face of both poles of a compound permanent magnet. In the receiver is the improvement of a magnetic needle and escape wheel. In the bell the arrangement that a very small magnetic power would be sufficient to set it going (important for very long distances).

In the switch the novelty of the construction is that which causes it to return itself to the bell after having been in use upon the instrument.

[Printed, 1*s*. Drawing.]

A.D. 1868, February 29.—N° 692.

COLLINS, John.—(*Provisional protection only.*)—"Improved apparatus for filling cartridge cases for " breech-loading guns."

The features of novelty in this invention consist, first, in so constructing the perforated slab employed to hold the cartridge cases while they are being filled as that the open end of the said cases shall not be injured by the forcing of the wads thereinto. Secondly, of an improved mechanical arrangement for depositing powder and shot separately in several cases at one time, and of rapidly altering the charge.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 29.—N° 693.

DÉTOUCHE, Louis Constantin.—(*Provisional protection only.*)—"Improvements in apparatus for " registering the number of passengers travelling by public conveyances, and the amount of fares paid."

This apparatus consists of a metal or wooden box divided into four compartments and placed in any convenient position in the omnibus; the exterior of the box shews the fares, being furnished with four circular holes protected by glass, and in which the fares 2*d*., 3*d*., 4*d*., and 6*d*. are exhibited; the number of persons travelling is registered inside the omnibus, each of the compartments being furnished with three openings, in which the numbers on three dials are shown at a time, one dial turning at a time by means of a ratchet and communicating motion to a second, which revolves a third, so that when one dial has revolved the ratchet in connection with it turns the second, and when that dial has made a complete revolution the third dial does the same.

The mechanism of these dials is set in motion by drawing down a rod or shaft with which each compartment is supplied, the effect of which is to depress an arm or lever above the dials; the end of this lever is furnished with a pawl actuating the first ratchet, which, as already mentioned, communicates motion to the others: each ratchet is provided with ten teeth.

The first dial indicates the units, the second the tens, and the third the hundreds.

On a passenger paying his fare the conductor pulls down the rod of the compartment denoting such fare, at the same time a bell rings to show that it has been registered, the said bell being struck by a hammer mounted on the shaft and working with a spring.

[Printed, 8*d*. Drawing.]

A.D. 1868, February 29.—N° 694.

McCARTER, John Walker.—(*Provisional protection refused.*)—" Improvements in the means or apparatus " for heating the feed water of steam engine boilers."

This apparatus or heater is fitted between the cylinder and the condenser, and consists of a cylinder or chamber into which the hot steam from the exhaust enters and passes through into the condenser, heating in its passage tubes through which the cold water passes from the pump and issues and proceeds as heated water into the boiler.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 29.—N° 695.

LINDSLEY, George.—" Improvements in obtaining and applying motive power for propelling carriages " and for other purposes, and in apparatus employed therein."

This is to utilize the weight of carriages and their load to assist in propelling such carriages.

A portion of the weight of the carriage and load is transmitted by a pair of small wheels to and supported by the forepart of the inner periphery of a pair of large wheels which run on the road. Cranks on the axle of the large wheels are connected by springs to the axles of a pair of hind wheels, the springs drawing the carriage forward on the large wheels. The axle of the large wheels is connected at right angles to the cranks just named. The springs combined with the weight of the carriage and load produce about ¾ths the revolution of the large wheels, and manual or other power applied to the cranked axle completes the revolution.

For driving machinery the large wheels revolve on a pair of friction wheels, from which the power is transmitted.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 29.—N° 696.

SMITH, William, GIDDINGS, John, and RANK, James.—(*Provisional protection only.*)—" A new " or improved fire escape."

According to this invention a platform or frame is constructed to be applied to a window or other place of egress from a building, and it projects outside the wall, having on its lower surface, attached by cords or chains, a series of frames connected to each other by short lengths of wire or other rope, so that the whole series can be lowered by means of side cords passing through the frames, and regulated by means of a winch handle attached to the platform within the building; the frames thus form a ladder, by means of which persons may descend from a building, or they may be lowered by a bag attached to the lowermost frame.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 29.—N° 697.

HILL, Alsager Hay.—(*Provisional protection only.*)—" Improvements in luggage labels or pads."

According to this invention a metal case is formed open at the top, the sides being slightly burred inwards; at the bottom of the case a metal plate is fitted, and is kept in a constant state of upward pressure by means of flat springs between it and the base of the case.

The cards or paper labels are inserted in the form of a pack into the open end of the case, and are secured by holes punched at one end, through which a ring or tube and eyelets or other fastening is applied; and corresponding holes being formed in the case and pressing plate, the whole is secured for attachment to luggage; and when the uppermost label is used it can be torn away, and the next one written on.

Or the case may be attached permanently to a portmanteau and the labels applied thereto.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 29.—N° 698.

ZWEZ, Rudolf.—(*Provisional protection only.*)—" A new or improved can for containing petroleum, " paraffin, hydrocarbons, and such like oils or spirits and other liquids."

According to this invention the can is so constructed that in pouring out the contents into a receptacle or lamp reservoir an excess or overflow is rendered impossible.

The top of the can is kept closed by a fixed cover, in which an inlet pipe is fixed for supplying the can. This pipe being closed by a cork plug or stopper to prevent ingress of air. In pouring out liquid an air pipe is brought to the spout, and extends to the interior of the can and to the top of the highest level of the liquid so that as the liquid is poured the displacement is compensated by the inlet of air, when the level of the liquid reaches the spout the supply of air is stopped and the flow arrested.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 29.—N° 699.

NORTON, JAMES LEE.—"Improvements in sinking or forming wells and in apparatus to be used for this "and similar purposes."

This Provisional Specification describes improvements in well tubes for obtaining water in sandy soil. Horse hair or other filtering material is wound around the inner tube of the well pipe, or if an inner tube be not employed, the end of the outer tube where there are perforations is filled with horse hair or other filtering material. A hollow boring bar is also described; water is pumped up this hollow bar, the debris formed by the cutter mixes with the water and is pumped up with it.

A method of turning the boring bar is also described.

[Printed, 10*d*. Drawing.]

A.D. 1868, February 29.—N° 700.

BARFORD, WILLIAM, and PERKINS, THOMAS.—"Improvements in apparatus for raising and stacking "straw and other agricultural produce."

This Provisional Specification describes constructing an elevating apparatus in such manner that it may be raised or lowered so as when in its lower position it may be used with a thrashing machine or be driven by hand power, or when in its higher position it may be driven by horse power, as in Coleman's machine, patented on the 11th October, 1860 (N° 2481). The Specification also describes supporting elevating machines on castor wheels so that they may be pushed sidewise.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, February 29.—N° 701.

SOLOMONS, BENJAMIN.—(*Provisional protection only.*)—"Improvements in telescopes."

In adjusting the eye-piece to telescopes, I provide the tube into which the eye-piece fits with two right angled or bayonet slots, into which take two projections in the eye-piece. I also obtain a highly increased power in telescopes of small size by the application of an achromatic lens.

The tube in which the eye-piece fits is provided with two graduated scales to suit the powers of the ordinary and of the achromatic lenses, the latter being arranged in a separate eye-piece, also provided with projections for taking into the bayonet slots of the tube.

[Printed, 4*d*. No Drawings.]

A.D. 1868, February 29.—N° 702.

SCHMOLLE, LÉONCE BERNARD.—"Improvements in skeleton skirts."

I dispense with the steel ribs in front of the skirt and unite their ends to a front apron piece of two parts united by buttons or otherwise. Straps may also be used instead of said apron piece. Further, instead of connecting the lower ribs to the tapes in parallel rows, I bring the ends together on each side; the skirt thus slopes away towards the bottom, which is deeper and train shaped. I also provide skeleton skirts with back lacing or webbing whereby they may be readily adjusted in position.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 2.—N° 703.

ARMSTRONG, WILLIAM JOHN, and BROWNE, CHARLES.—(*Provisional protection only.*)—"Improve- "ments in anchors."

The invention has for its object to furnish an improved anchor, strong, durable, and simple, and would be so constructed as to clear itself should it become fouled; and it consists in the construction of the cross, shank, and stock made in seperate pieces. Upon the shank at the lower end is a tenon, the shoulders of which are inclined in each direction from the central point, so that the crown of the anchor having a mortise hole to receive it may rock upon the said tenon to enable the fluke to take a surer hold in the ground. The stock is made in two parts, the inner end of each part having a tenon which passes through a mortise formed in the upper part of the shank. The mortise ends are inclined as well as the shoulders of the tenon so as to allow the parts of the stock to incline upwards to allow the cable to slip off the stock should it become fouled, but they cannot move downwards further than to be at right angles with the shank.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 2.—N° 704.

WILSON, Henry.—(*Provisional protection only.*)—"Improvements in meters, valves, and cocks for "measuring, regulating, and discharging liquids, gases, or fluids."

The prevention of waste of fluids in discharging and registering or measuring the quantity discharged.

The improvements consist in constructing cocks or valves for discharging fluids, so that the fluid can only pass through the cock or valve whilst power or pressure is applied to keep the said cock or valve open; the instant such power is withdrawn the cock or valve closes.

The meter for measuring the quantity of fluid discharged is formed by discharging the fluid which passes through the said cock alternately above and below a piston, which is thus made to work up and down a cylinder; to the piston is attached a rack geared to a pinion and system of wheels which register each stroke of the piston, consequently the amount of fluid occupying the cylinder or cistern each stroke.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 2.—N° 705.

ROMAN, Louis.—(*Provisional protection only.*)—"Improvements in apparatus for obtaining motive "power from rivers or streams of water, and for facilitating boats ascending and descending rivers or "streams."

The invention consists of an endless chain or rope provided with transverse paddles, which chain or rope is laid horizontally in the vertical plane over horizontal pulleys, drums, or tooth wheels, so that the lower part of the chain or rope with the paddles will be immersed in the river or stream in the direction of the current and cause the immersed part of the chain or rope to advance in the direction of the current, thereby causing the pulleys, drums, or wheels to revolve, and thus procuring a motive power which by any suitable mechanical means can be made subservient for driving machinery or for other useful purposes.

Two or more endless chains or ropes can be employed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 2.—N° 706.

ROLLO, William.—(*Provisional protection only.*)—"Improvements in the arrangement and construction "of waterclosets."

The feature of novelty which constitutes this invention is, the use of an air vessel of special construction to which the branch pipe from the water supply main pipe is directly connected, and thus the necessity for using a tank or cistern situated at a higher level than the pan of the watercloset is avoided.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 2.—N° 707.

RAWSTHORN, John.—(*Provisional protection only.*)—"Improvements in machinery for dressing mill "stones."

This invention relates to machinery where the pick or tool is actuated by power, and consists in arrangements, by springs or other elastic medium connected with the mechanism, for giving an elastic blow, which can be adjusted or modified to any required extent. Also in arranging several picks or tools to operate at the same time.

The mechanism is mounted on slides to move in the line of the cut and advance after each line of cut, and the picks or tools are actuated by cams, cranks, excentrics, or other suitable means.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 2.—N° 708.

NEWTON, William Edward.—(*A communication from Charles Lawrence Perkins.*)—(*Provisional protection only.*)—"Improved apparatus for burning hydrocarbons for heating purposes."

The hydrocarbon or other liquid fuel is placed in a chamber below the furnace in connection with a pipe or pipes through which air or air and steam are forced through apertures or nozzles situated below the surface of the liquid fuel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 2.—Nº 709.

NEIBER, Ferdinand.—(*Provisional protection only.*)—" Improvements in fastenings for glove boxes, " handkerchief boxes, purses, cigar cases, necessaires, writing cases, and other articles."

A socket containing a spring (or one or more such sockets) is placed on one flap, jaw, lid, or other part of the article to be fastened, and one, two, or more sockets are placed on the other flap, jaw, or lid, or on other convenient part of the article; that is to say, the socket holding the spring is on one side of the mouth or opening, or on one side of the division between the flaps, lids, or jaws, and the other two sockets are on the opposite side. A piece called a " fastener " is placed across the mouth, opening, or division, so that its ends or the ends of limbs or parts thereof lie in the sockets; such fastener is not a fixture. The spring presses against one end, so that the others are forced well home into their sockets. The fastener may be ornamental or may form an useful article, such as scissors, flask, &c.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 2.—Nº 710.

HORSLEY, Thomas.—" Improvements in breech-loading of fire-arms."

This Provisional Specification describes mechanism by which anyone using the gun can readily see if it be loaded or not.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 2.—Nº 711.

SHARROCK, Samuel.—" Improvements in the construction of piles."

According to the Provisional Specification, piles are formed either of wrought iron or steel rolled to a semi-cylindrical form. Two lengths of metal so rolled are placed face to face and rivetted together to form the stem, the screw is rivetted or otherwise fixed into the bottom of the stem.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 2.—Nº 712.

SMITH, Alpheus.—(*Provisional protection only.*)—" Improvements in the construction of railway wagon " axles boxes."

This Provisional Specification describes an arrangement for fixing the bottoms of axles boxes of railway wagons. The bottom is slid into its place from the front of the box.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—Nº 713.

USHER, Alfred Austin.—(*Provisional protection only.*)—" Improvements in respirators."

The invention consists in so constructing respirators that they may be worn inside the mouth, between the lips and the teeth and gums, whereby the unsightly appearance given by ordinary respirators is obviated.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—Nº 714.

GEDGE, William Edward.—(*A communication from Victorin Tybur.*)—" A mineral paper-hanging " intended to preserve apartments from dampness."

This invention consists in preparing a paper-hanging, firstly, with a coating of red lead, or any paint having lead for basis, and then with a coating of sand or analogous material laid on to form ridge and furrow or of equal thickness throughout.

The sanded face of this paper being applied against any damp wall, a decorative paper-hanging may be pasted over it without fear of its being injured by the damp, as no moisture will penetrate through the mineral paper.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—Nº 715.

COCHRANE, Charles.—(*Provisional protection only.*)—" Improvements in valves or dampers for pipes, " passages, or flues, serving to conduct gases at high temperatures."

This invention consists in constructing a valve or damper more particularly applicable to hot blast pipes, consisting of a casing similar in form to that of an ordinary sluice valve, in which a hollow valve, through which cold water is made to circulate, slides up and down against a seat, also provided with water spaces through which cold water circulates. The circulation of the water in the valve, as also the raising and lowering of the valve, is effected by two long pipes connected thereto passing up through long necked stuffing boxes fixed on the top of the casing, outside of which the one pipe is in connection with a cold water supply pipe, while the other is connected to an overflow pipe, through which the water after passing through the valve escapes.

The valve is raised and lowered by any suitable means, and when in a raised position it is situated entirely in a projecting chamber in the top of the casing, so as to be out of immediate contact with the blast.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 716.

REYNOLDSON, Herbert Pinkney.—(*Provisional protection only.*)—"Improvements in portfolios."

Metallic back to portfolios to prevent the tearing of the backs of portfolios used for preserving newspapers, journals, magazines, and other papers and periodicals.

The strings by which the papers are held in the portfolio are placed in the inside of the back of the portfolio, and are attached at either end to a metallic plate, which is fastened to the back, thus avoiding the possibility of tearing the portfolio, and securing much greater durability to the same than can be obtained by any other method.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 717.

MOSS, Frederick. — (*Provisional protection only.*) — "Improvements in apparatus for registering passengers travelling by public vehicles and in the construction of certain vehicles to be used in combination therewith."

The novelty and feature of the invention consists in the application and use of an ordinary admitting registering turnstile or hinged door or bar which will register and admit only one person at once, and only one in one direction, and also of an exit turnstile, door, or bar opening in the opposite direction. These may either be arranged at the hinder part of the vehicle, in the doorway now used, the entrance being placed at the left side, so as to take up passengers readily, and the exit being on the right; or the entrance and exit may be at different parts of the vehicle so as to enter at one doorway and leave by another, and by so arranging or constructing the vehicle the passengers using the outside may pass through the same entrance and exit as the inside passengers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 718.

BARKER, John.—"Certain improvements in the method of consuming smoke from the fuel used in furnaces, and in the method of supplying fuel to furnaces, and in apparatus connected therewith."

The novelty and feature of the invention consists in the application and use of jets or flames of gas behind or in the flues of boilers to keep the gas contained in the smoke ignited, whereby the gas or other carbon is consumed, and in the use of a self-acting feeding apparatus, whereby the fuel is constantly supplied to the furnace in small quantities.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 3.—N° 719.

BISSET, Thomas.—(*Provisional protection only.*)—"Improvements in reaping and mowing machines."

This invention has for its object to improve the cutting action of reaping and mowing machines and to render the cutting mechanism less liable to become choked than in ordinary machines; and the invention consists in fixing within and above each finger, sufficiently hollowed out for the purpose, a strip wrought in cast-steel and folded back over the space in which the knife works. The edges of the steel strip are bevilled or sharpened so as to form fixed cutters both above and below the reciprocating knife.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 720.

THOMPSON, William Bruce, and GALL, William.—"Improvements in machinery or apparatus for winding yarns or threads."

The feature of novelty which constitutes this invention is the special arrangement of mechanism for stopping the rotation of the spindles when the purns or cops are fully built.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 3.—N° 721.

HASWELL, John Armstrong, and BROWN, George.—"Improvements in signal apparatus to be used in railway passenger trains."

This invention relates to an apparatus to be worked by the action of the cord which establishes a communication between the guard or conductor, passengers, and engine driver of railway passenger trains, and consists of an apparatus for exhibiting to the guard or conductor of a railway passenger train the particular compartment of a carriage containing the passenger that has, by means of the cord communication, called the attention of the guard, conductor, or driver to a real or imaginary danger to the train or to the passengers it contains whilst it is in motion. According to our invention we propose to place at the side of the top of the door of each compartment of the carriage a small pulley for carrying the communicating cord, placed in an iron frame and supported in it by a small spiral spring [*and a spindle through the said spiral spring*[*]] working in connection with a signal arm attached to the side of the door of each compartment. The action of the apparatus is that when a passenger pull the communicating cord the pressure on the pulley will compress the spring and the arm signal will be released and will project at right angles to the side of the carriage, exhibiting itself distinctly, and clearly indicating the compartment containing the passenger that has pulled the communicating cord, and will remain in such condition until released by the person or persons responsible for the proper working of the train.

This invention will be applicable to all railways on which passenger trains are run where a communication exists between the guard or conductor and engine driver by means of a cord.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 3.—N° 722.

MANLY, John, the younger.—"Improvements in those kinds of nails which are used upon furniture, " saddlery, and trunks and for other useful and ornamental purposes."

This invention has reference to the manufacture of those kinds of nails specified in the title, and consists in the combination of a cast head with a wire point or shank secured or put together by pressure in the manner explained in my Provisional Specification.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 3.—N° 723.

SPENCE, William.—(*A communication from Joseph Bonneau.*)—"Improvements in machines for making " nails."

This invention consists in the manufacture of nails from a bar of cold metal drawn to the requisite section by first removing from the bar a series of small portions corresponding with nails of different dimensions, afterwards taking from another face of the bar another series of small portions answering the purposes of brads and lastly in forming a series of larger nails.

The bar is advanced the length of a nail at each turn of the machine, and is acted upon first by horizontal cutter, afterwards by a vertical cutter, and finally by punches to form the heads of the nails.

At each turn of the machine there are caused to fall out a nail pointed on the four faces and properl headed, also a smaller nail with a flat point, and also a nail without a head.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 3.—N° 724.

ZOX, Henry.—(*Provisional protection only.*)—"Improvements in the manufacture of hats and caps a " other coverings for the head."

According to this invention, hats, caps, and other coverings for the head, such as collegiate caps, ladi bonnets and hoods, are manufactured, either completely or partially, of a frabric of horse-hair or other h interwoven with a warp of cotton, silk, or wool, such fabric being applicable in a double layer with the h wefts at or about right angles to each other. By these means, when a blow or pressure is given to any p of the hat or other covering, the fabric does not break or bend in, but yields to the pressure and springs b into its proper shape.

The hat or other covering may be completed by a silk covering or otherwise as required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 725.

WHITTLE, William.—"Improvements in steam engines and steam boilers."

One part of these improvements in steam engines consists in employing a receiver in communication w the working cylinder of the engine so that after the piston has completed its stroke the steam from t cylinder partly passes into the receiver, and after a vacuum has been formed on one side of the piston t steam from the receiver is admitted to the other side of the piston to urge it forward. Or the steam in t receiver may be made to act on a second and larger piston in a second and larger cylinder, the piston in the smaller cylinder being worked in the usual way.

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[*] The words " and a spindle through the said spiral spring " are found in the copy of the Abridgment delivered by the Applica but do not appear in the original Abridgment.

Another part consists in employing two cylinders in single acting steam engines. One cylinder is a steam cylinder and the other an atmospheric cylinder. The pistons being at the top of their respective cylinders, and a vacuum being beneath them, steam is admitted to the upper side of the steam cylinder piston, atmospheric air at the same time acting on the piston of the atmospheric cylinder. On the pistons reaching the bottom of the cylinders, steam is cut off from the boiler and an equilibrium is established in the cylinders, when the pistons are raised to the top of the said cylinders by the counterweight of the beam. The steam under the pistons now passes to the condenser and a vacuum is formed under the pistons, which are caused to descend in the manner explained.

Another part consists in the combination of the ordinary surface and injection condensers.

Two closed vessels connected together by zig zag metallic pipes are enclosed in a cistern communicating with the sea or with a cooling pond or river. The lower vessel has an injection pipe for conveying injection water. The steam in passing through the tubes described is partly condensed, the condensation being completed by the injection of cold water into the lower vessel. The quantity of cold water required for injection is very small and it can be cooled again for use.

The improvements in steam boilers consist in constructing an inner casing or lining to the boiler. The said casing is made in two parts open at top and nearly meeting along the bottom of the boiler. The lower ends of the two parts of the lining or casing form troughs in which the sediment from the water is collected. The heat applied to the exterior of the boiler causes the water to circulate rapidly between the sides of the boiler and the lining. The lining described may also be applied to the internal flue or flues of the boiler.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, March 3.—N° 726.

DEWAR, JAMES.—" Improvements in preserving blood for use as food."

Preserving blood for food by desiccation, or by treating it with sulphurous acid with or without desiccation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 727.

ANDERSON, GEORGE.—" Improvements in apparatus for moulding and compressing substances for " artificial fuel."

The apparatus consists of a pug mill fixed horizontally on a standard, in which the materials are mixed and then forced into the moulds of a rotating table, where they are compressed and moulded by a ram having up and down motion imparted by suitable gearing.

The moulds have false bottoms, which lift the moulded material to a level with the surface of the table, whence they are removed by a wiper operated by the gearing.

In a modified arrangement I use a single mould, consisting of a movable steel thimble working on a solid plug fixed to the standard. The ram in this case works in a barrel formed on the casting closing the end of the pug mill. The moulded materials are removed by a lever arm, which dusts the mould at same time by means of boxes at each end having perforated bottoms.

A double acting machine on the above principle is provided with horizontal rams, the materials being supplied between them by a vertical pug mill. The ram and pug mill shafts are in one, motion being imparted to the thimbles by a cam acting alternately on each.

In a modified double acting machine I mount the ram barrels at either end of the bed plate with ports on their top sides, on which is placed the pug mill with corresponding ports.

In a single acting hand machine on the same principle the ram barrel has two ports, one communicating with the hopper and the other with a powder receptacle.

[Printed, 2*s*. Drawings.]

A.D. 1868, March 3.—N° 728.

BURTON, EPHRAIM, and LAWRENCE, JOHN.—" Improvements in machinery for screening and " sifting coals, cinders, and other matters."

We suspend two sieves in an inclined position one above another. The upper sieve is fed with matters to be sifted by means of an endless band passing round pullies and carrying elevators, which are filled by hand, and discharge their contents into the upper sieve. The matters passing through the upper sieve fall into the lower one, and the products of the second sifting are conducted by a hopper to their receptacle.

In sifting cinders, the matters in the upper sieve are acted on by a blast of air as they fall from the sieve, which blast separates the papers and other light matters from the heavy ones.

To facilitate the sifting operation we impart a shaking motion to the sieves by connecting them to a cranked shaft. The whole is operated by any suitable motive power and gearing.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 3.—N° 729.

KENNEDY, Hugh.—" An improved machine for cutting files."

The nature of my invention consists chiefly in regulating and controlling the movements of the cutter or the file blank, so that the teeth cut in the latter are not exactly parallel with each other. The main bed of the machine carries an adjustable sub-bed, to which the table or bed for supporting the file blank is connected. The said table is operated by means of a feed screw and ratchet driven by the main shaft, which also operates the sub-bed and a ratchet and cam for actuating a lever connected with the cutter. The latter is fitted to turn freely in a wrist attached to an arm, The cam is formed with peripheral projections, which cause the lever to vibrate laterally and change the angle of the cutter upon the file blank.

[Printed, 1*s*. Drawings.]

A.D. 1868, March 3.—N° 730.

BELL, Samuel Alexander, and HIGGINS, George Higgons.—" Improvements in the manufacture " of match boxes, and in apparatus to be used therein."

1. Partially closing one end of the case of the match box and preventing the tray from being withdrawn.
2. Using distributing rollers for applying the friction composition to match boxes.

[Printed, 1*s*. Drawings.]

A.D. 1868, March 3.—N° 731.

JOHNSON, Thomas.—" Improvements in treating ores to obtain copper therefrom, and in evaporating " brine."

According to this Provisional Specification furnaces for roasting copper ores are heated by gas. The ore is placed upon a bed having flues arranged underneath it. The flames and heat of the ignited gas traverse the flues from end to end; they then ascend and return over the bed in contact with the ore. The arrangement for heating pans for evaporating brine is very similar to the above.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, March 3.—N° 732.

HARRISON, James William, and HARRISON, Cecil Reeves.—(*Provisional protection only.*)—" Im- " provements in parallel rulers."

According to this Provisional Specification parallel rulers are graduated on the connecting links in such manner that by observing these graduations and setting the ruler accordingly, parallel lines may be drawn at any required distance the one from the other.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 733.

SLEIGH, Burrowes Willcocks Arthur.—" Improvements in hydrostatic engines."

This Provisional Specification describes an improved mode of applying the augmentation of hydrostatic pressure, whereby a rotatory motion is obtained, by means of which machinery may be driven.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 3.—N° 734.

LEE, James Abraham.—" Improvements in machinery for cutting and reducing wood, adapted especially " to prepare it for the preparation of paper fibre therefrom."

This Provisional Specification describes a disc which has one or more cutters projecting from its face and is caused to rotate. The wood to be cut is placed in an inclined trough, open at both ends; at the lower end the wood rests upon the face of the disc, and at the upper end it is pressed forward by a plunger. The rotation of the disc cuts off small pieces of wood, which fall upon rollers which break them up to the required size.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, March 3.—N° 735.

NASAROW, Iwan Wassilljewitsch.—(*A communication from Grigory Wassilljewitsch Nasarow.*)—(*Provisional protection only.*)—"Improvements in the manufacture of iron and steel."

According to this Provisional Specification in order to produce iron or steel direct from the ore the ore is treated with a solution of carbonate of soda and then melted in a furnace. Scrap iron is treated in a similar manner, carbon being in some cases added.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 4.—N° 736.

CADBY, Frederick.—(*Provisional protection only.*)—"Improvements in the construction of cruet and egg "frames or stands."

This invention refers to the combination of an ordinary cruet frame with an egg stand so as to form one stand or frame for each and both purposes, and which may be made so as to be disconnected if required.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 4.—N° 737.

JEFFERIES, Samuel.—"Improvements in and apparatus for securing, adjusting, and arranging cords, "ropes, and chains employed for raising and lowering Venetian blinds, curtains, windows, shutters, and "other analogous purposes."

This invention consists in affording facility for raising, lowering, adjusting, and securing Venetian blinds, curtains, shutters, windows, ventilators, and other like articles by a self-revolving reel or pulley, acted upon by a catch, lever, or plunger, or by a friction brake and catch; also to maintaining the slats of Venetian blinds level and parallel.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 4.—N° 738.

SMITH, Thomas, WOOD, Thomas, and DON, Thomas.—(*Provisional protection refused.*)—"Improved "machinery and appliances for preparing, cleaning, screening, decorticating, and grinding wheat and other "grain and separating and collecting the several products thereof."

The features of novelty in this invention consist in certain improved mechanical arrangements and appliances for effecting the above mentioned operations which are arranged under three separate heads. Under the first head the novelty consists in the use of two conical shaped screens in the construction of machines employed for screening, cleaning, or decorticating grain, the said screens working in conical revolving or fixed chambers, and capable of being adjusted nearer to or farther from the inner surface of the said chambers whilst the machine is in motion, instead of using a cylindrical shaped screen working in a cylinder, as commonly practised, thereby dispensing with the necessity for stopping the machine to adjust the screen in the cylinder. Under the second head the novelty consists in the use and application of a revolving or fixed table and scrapers to grinding machines for collecting and discharging the "stive" in a more ready and effective manner than heretofore, and keeping the bedstone cool, using blast and exhaust either separately or in combination, as commonly practised. Under the third head the novelty consists in the use of a conical shaped stripper working in a similarly shaped revolving or fixed chamber in the construction of flour machines for separating the flour from the bran, and collecting and discharging the different qualities of the products; the aforesaid conical stripper being also capable of lateral adjustment whilst the machine is in motion, as in the last mentioned machine.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 4.—N° 739.

COLE, Arthur, and CARTER, Jonathan.—(*Provisional protection only.*)—"Improvements in and "applicable to lamps for burning petroleum, hydrocarbon, and other oils."

The invention is especially applicable to lamps exposed to draughts, and consists in regulating the admission of fresh air to support combustion, and the exit of heated air, so as to prevent draught to the burner either at the bottom or downwards from the top of the lamp.

This is effected by causing the fresh air on its way to the burner to pass between and around the ends of two or more plates, so as to overcome its tendency to rush forcibly on to the burner, and a similar arrangement of plates at the top of the lamp prevents downward draught. The course of the fresh air from the inlet to the burner and of heated air thence to the outlet at the top of the lamp is not otherwise impeded.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 4.—N° 740.

CLIFTON, Edward.—" Improvements in adjustable door handles."

The novelty consists in the application to adjustable door handles or knobs of a slidable cotter with a slot hole therein, one part of which is formed to fit the square of the spindle and the other sufficiently wide to allow the said spindle to turn in it.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 4.—N° 741.

LEWTHWAITE, John.—" Improvements in treating the material known as 'parkesine,' and in applying " it to various useful and ornamental purposes."

The parkesine or compound in a plastic or pasty state is spread on the surface to which it is to be applied and immediately subjected to pressure sufficient to drive out all air. It is pressed for about two hours; then if the surface is required to be polished it is fixed or dried by exposure to the air for two months or otherwise, and then polished by rotating brushes or otherwise. The thickness of the coating of parkesine will always be regulated by the purpose to which it is to be applied. The foregoing is the mode of treatment. The parkesine so treated is applied to various purposes. For a printed surface a fabric is coated with parkesine and a sheet of paper having a design thereon is brought upon the parkesine; the whole is immediately pressed as aforesaid and allowed to fix; the paper may then be washed off and the parkesine polished. Instead of paper a zinc sheet or other surface plain, embossed, or printed may be used. To waterproof paper several sheets are united by the parkesine aud afterwards stripped apart, one end being previously wetted. A substitute for parchment may be made by coating paper or cloth with a suitable thickness of parkesine. Shoes and hollow articles are made by forcing parkesine between an inner and outer mould, the inner, when for shoes, being covered with felt. Razor strops and like articles are made by mixing sand or grit with the parkesine and then causing a suitable thickness to adhere to a cloth or surface. Shoe soles are made in the same way. A long list of articles to which parkesine or analogous compounds treated as aforesaid [*is to be applied* *] is appended to the Specification. The color of the compound will vary according to the use for which it is required.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 4.—N° 742.

SMITH, Hubert Ellis.—(*Provisional protection only.*)—" Improvements in the hauling or winding gear " of engines used for agricultural and other purposes."

I mount two drums on the engine on separate axes; each of said drums has a series of deep grooves on its periphery, which receive the rope as it passes round the drums in a coil from one to the other. Both drums are driven by the engine and act together on the rope.

For steam ploughing two engines are used having the cultivator between them. The rope passes several times round the pair of drums on each engine, its end being connected by the cultivator. By this means the engines traverse the cultivator backwards and forwards across the field between them.

These drums may also be employed in connection with hoisting and other winding machinery.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 4.—N° 743.

CLARK, Alexander Melville.—(*A communication from Faure Biénez.*)—" Improvements in paving " roads, streets, or ways."

I make paving blocks of cast iron about eight inches square with perforations at their centre for allowing the rain water to pass through.

The surfaces of the blocks are grooved, the grooves communicating with deeper cross channels inclined towards the central perforations. The under side of the blocks is ribbed at the angles to form ducts for the water. The blocks if desired may be tongued and grooved so as to connect them together.

In a modified arrangement I provide a plate on the under side of the block having gutter shaped channels for carrying off the water passing through the centre holes. Small stones are filled in between the plate and block to prevent sand passing with the water.

The top surface of the blocks may be steeled to prevent wear. The holes may also be filled with some pervious substance.

The whole surface may also be covered with sand caused to adhere in any suitable manner.

The blocks may be made of square, triangular, hexagonal, or other form.

[Printed, 1*s*. Drawings.]

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* The words " is to be applied " are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

A.D. 1868, March 4.—Nº 744.

STUART, William Knox.—"Improvements in arrangements and apparatus for dealing with and utilising "sewage."

This invention relates to a system of dealing with and utilising sewage, and which comprises the employing of a single main intercepting sewer or channel to convey the contents of a group of city sewers to a suburban establishment whereat separating and utilising processes are to be conducted. At such establishment the main channel supplies the sewage to large reservoirs and numerous depositing tanks, the arrangement and construction of which mainly constitute the present invention. The sewage first enters and spreads over a large shallow reservoir, which is formed with a deepened channel or race along the side opposite to the inlet; a grating or set of rails is fitted along both sides of this race to keep back floating and bulky articles. In the race there is an agitator somewhat in the form of a shuttle, which is made to reciprocate from end to end of the race by means of cords passing over pulleys and actuated by means of a waterwheel, which may be driven by the sewage current itself. The action of the shuttle agitator is to drive out some solid matters over the inclined ends of the race, and to assist lighter solids in floating over the front edge of the reservoir into a series of depositing tanks arranged adjacently to the reservoir. At about the surface of the water in each tank there is arranged a layer of straw or other open absorbent material which is held between a couple of gratings. This layer serves to absorb gaseous aud floating matters, and is changed periodically. The heavier solids find their way beneath the absorbent layer into the lower parts of the tanks, each of which is formed with a central well down to which the bottom generally inclines.

Conical or pyramidal covers are applied to the wells, and being mostly below the water level are made hollow so as to be partially floated, and consequently easily raised or lowered. After a well has been emptied in the manner herein-after explained its cover is slightly raised, and the solid matters in the sewage find their way under it into the well. A tunnel is formed under the tanks, and the bottom of each well is fitted with a sluice or door. And when a well is full of solid matter the hollow cover is screwed down, and the bottom sluice is opened to allow the matter to fall out into a waggon placed below to receive it. In order that the matter may fall out freely a tap or valve is opened in the top of the hollow cover to allow air to enter above.

[Printed, 8d. Drawing.]

A.D. 1868, March 4.—Nº 745.

KINCAID, John George.—"Improvements in twin screw propelling apparatus."

This invention has for its object the constructing or arranging of twin-screw propelling apparatus so that the propellers can be conveniently adjusted at various depths; and it consists in fixing the propellers on shafts connected to the shafts which pass through the stern pipes by universal joints just outside the stern pipes; and in carrying these outside shafts in bearings in the opposite ends of a crosshead, the middle of which is fitted to slide on a frame curved concentrically with the universal joints. A segmental toothed rack is fixed to the crosshead, and passing upwards through the vessel's stern has a pinion applied in gear with it, whereby the crosshead can be raised or lowered and with it the propellers.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, March 4.—Nº 746.

MITCHELL, William, and MITCHELL, Thomas.—"Certain improvements in the manufacture of felt "carpeting and in apparatus to be employed therein."

The improvements consist in manufacturing felt carpeting in such a manner that the width and length are composed of continuous felt, and without seam, each carpet consisting of one piece only, and the apparatus to be employed may be varied according to circumstances, as such seamless wide felt may be produced in several ways.

The second part of the invention relates to a novel construction of carding engine to be applied for such purpose, by which means a fleece of wool or other fibrous material is delivered of the full width required for subsequently forming into carpeting, and this part of the improvements consists in constructing the carding cylinders and rollers contained in the engine of large diameter and of extended widths, and of metal or lags of wood which are internally stayed with transverse and diagonal ribs in such a manner that the surface or eriphery of the cylinders will have proportionate strength, durability, and equality of surface; these surfaces then truly cylindrical are to be covered in the usual manner with ordinary "cards."

Thirdly, the invention relates to an apparatus whereby a carding engine of narrow ordinary width may be ployed for the manufacture of wide seamless felt carpeting; and the improvements consist of an endless ron or cloth extended between two revolving rollers and receiving the fleece from the doffing cylinder, one roller being near the doffing cylinder of the engine, and the other regularly traversing to and fro by ordinary mechanical means above a "batting frame," table cloth, or other receiver for the layers of fleece, which has an intermittent motion beneath and at right angles to the said traverse of the apron; a series of alternately rising and falling rollers are also situated between the carding engine and the "batting frame" under and over which the apron and fleece pass.

[Printed, 1*s*. Drawing.]

A.D. 1868, March 4.—N° 747.

DAVIES, George.—(*A communication from Louis Charles Emile Vial.*)—(*Provisional protection only.*)—"Improvements in the manufacture of gas for lighting and heating."

This invention relates to the decarburation of gas and the dehydrogenation of ammonia, and the desulphuration of hydrosulphuric acid, from which it is evident that the process employed is precisely the reverse to those heretofore known and in use for the production of lighting or carburetted hydrogen gases.

It consists in decomposing the gases by electricity or by superheating, either at the time of or after their production and before or after their purification, either alone or with coke mixed with steam, or with coke only, or with iron, or with any other matter capable of reducing them.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 4.—N° 748.

SCHOLEFIELD, Charles.—(*Provisional protection only.*)—"An improved method of hanging or suspending window sashes."

The use of counterpoise weights for suspending or balancing windows is dispensed with, and instead thereof two cords are attached to part of the sash and passed over a pulley in such a manner that one sash will balance the other in all positions.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 4.—N° 749.

ASKEW, John.—(*Provisional protection only.*)—"Improvements in the construction of hook and eye for fastening together the ends of window blind cords and cords for hanging pictures."

The novelty is, joining or fastening window blind and other cords and cords for hanging pictures by a hook and eye instead of laping the ends of the cords together and sewing them together as is now the practice.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 4.—N° 750.

BRIGHAM, John, and BICKERTON, Richard.—"Improvements in reaping and mowing machines or harvesting machines."

This invention consists, under the first part, in giving a vertical oscillatory motion to the dividing irons, over the outer running wheels of harvesting machines, by hinging them to a fixed joint near the front, and connecting them by a connecting rod to a crank pin in the side of that wheel, and having the outer iron considerably higher than the inner one, so as to deliver the cut crop over the edge on to the delivery platform.

Under the second part this invention consists in the construction and application in harvesting machines of long fingers at intervals across the finger bar projecting forward and downward to near the ground, by preference fixed to the point of every alternate, or so, dividing fingers, but they may also be fixed to the finger bar direct. The front part of each finger is turned up a little so as not to catch the earth, and a light iron, inclined, division piece extending backwards and upwards over the cutters and finger bar to which it is firmly secured at the upper back edge. It is preferred to hinge these fingers by a stop joint below close to where they are fixed to the fingers, so that they can rest on and rise to any inequalities of the ground, but cannot be caught by small obstructions, so as to dig into the earth or obstruct the forward action of the machine; when so hinged a spring bow piece rises up from near the point, having its back free end resting and sliding on the fixed division piece before named, to sustain it and the strain of the finger on the ground.

The end of this spring may be made with a stop catch or pin to hold it from turning down into the ground instead of forming the stop joint on it. The action and use of these new and improved fingers consists in causing them to enter beneath and divide the fallen and badly laid crop from the ground over the finger bar, so as to be properly cut between the fingers by the knives and laid on to the delivery platform.

Under the third and last part this invention consists in various modifications of new mechanical arrangements for tilting the rake arms of harvesting machines by the motion of the shaft carrying round the arms so as to make the one rake be down close to the delivery platform while passing over it, and at the same time have the other rake up passing round, over, and clear of the body of the machine. By one arrangement this is effected by one end of a connecting rod attached to one arm a short distance from the joint on which it oscillates near the top of the actuating shaft, and the other end to an eccentric pin in the face of a bevel pinion revolving loose on a stud projecting laterally from the side of the actuating shaft, the pinion gearing into a complete or segmental stationary bevel wheel fixed to the top of the frame carrying the upper bearing of the actuating shaft, which as it revolves actuates the pinion and crank pin and connecting rod, so as to raise and lower the arms at the proper part of their revolution, as the segmental wheel is properly set and fixed for that purpose. Instead of the crank pin a cam groove may be formed in the face of the pinion having an anti-friction roller working into it on a stud in the lower end of the connecting rod. By another arrangement the duplex arms of the rakes may oscillate on a short tilting shaft carried on a cross head keyed on the top of the actuating shaft, the short tilting shaft having a segmental bevel pinion fast on each end gearing into a corresponding short segmental wheel fixed to a stationary part of the frame, which would turn or tilt the short shaft and rake arms, the one down and the other up, as they were brought round to where the segmental wheel was fixed at the proper position for so doing by the revolution of the actuating shaft; or otherwise instead of the segmental pinions on the ends of the short tilting shaft a short tilting lever may be fixed on one side, which as it is brought round to the proper positions for being tilted would come in contact with fixed stops or surfaces so as to be tilted by the revolution of the actuating shaft. A spring clutch arrangement being fitted to the other side of the tilting shaft, which would be drawn out of gear just before and while the tilting lever was turning the shaft and rake arms by the action of inclined fixed stops or surfaces, and allowed to spring back by the force of the spring, so as to hold the shaft and arms as soon as they passed the stops and were tilted. Another improvement under this part of this invention in the self delivery mechanism of harvesting machines consists in attaching a swivelling rake to work on the ground by a strong spindle to the side and rear of the segmental side delivery platforms, so as to gather the crop delivered on the ground by the automatic delivery rakes into compact bundles or sheaves and then be tilted up so as to pass over and fall immediately in front of each last formed sheaf, so as to draw or rake up the next in succession delivered on the ground.

The tilting of this gathering rake or its spindle is effected by cam arms or surfaces fixed at proper intervals on the actuating shaft of the rakes which sweep the platform and deliver the bundles rather in a scattered state on the ground; these cam arms acting on an anti-friction pulley and rod arrangement or other equivalent attached to the rake so as to tilt it as described.

[Printed, 1*s*. Drawing.]

A.D. 1868, March 4.—N° 751.

COLE, Isaac, and MAXFIELD, Arthur.—(*Provisional protection only.*)—" Improvements in sewing " machines."

This invention refers to certain improved arrangements or formation of the needle bar and its actuating medium; it refers to the construction of parts for driving the shuttle carrier, as also to the shuttle carrier itself; the invention has reference further to the construction of shuttles for sewing machines, the driving gear for the same, and to methods of more highly finishing parts of sewing machines.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 4.—N° 752.

ROCKLEY, Charles Russell.—" Improvements in pipes for smoking tobacco."

According to this Provisional Specification the draft passage is made to terminate within the bowl, at the apex of a conical projection springing from the bottom of the bowl.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 4.—N° 753.

CHINZ, Charles.—" A process for the partial elimination of the nitrogen from the products of combustion, and furnaces and apparatus connected therewith."

The principle features of novelty in this process consist, firstly, in the partial elimination of the nitrogen om the products of combustion in blast furnaces, gas-generators, and other furnaces by means of carbonic d gas obtained from the decomposition in muffles or retorts of limestone or by other means; and, secondly, in constructing gas generators with a sliding bottom and feed box, by which the fuel is introduced into the furnace through the bottom.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, March 4.—N° 754.

NEWTON, Alfred Vincent.—(*A communication from Robert Creuzbaur.*)—(*Provisional protection only.*)—" Improved apparatus for measuring spirituous liquors."

The specific gravity of spirituous liquors is ascertained on the well known mode of immersing a floating body and judging the " proof " of the liquor by the greater or less displacement by such body. The novelty consists in automatically and continuously recording the gravity of the liquor as it passes through the meter, so that the quality of any quantity thereof can be ascertained, as well as the average of the whole or any part thereof.

The temperature is ascertained by using a modified thermometer. The novelty therein consists in so arranging the thermometer and attachments thereto that its indications are continuously and automatically recorded.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 5.—N° 755.

BAKER, Frederic Thomas.—" Improvements in the manufacture of cartridge cases."

Tin foil is combined with paper. The foil is either rolled round the paper case, or a layer of foil is interposed between the rolls of paper. The foil is fixed securely at all points to the paper by adhesive composition. The wad which closes the top of the case of sporting cartridges is also covered with foil.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 5.—N° 756.

STEVENS, James John Frederick.—" Improvements in the construction of railway and other signal " apparatus."

Signal posts have their four uprights connected by zig zag latticework converging to the centre, where the four pieces are united. One upright forms the lamp slide.

To prevent the lamp falling to the bottom if the chain breaks, a wedge is connected to the slide and the lamp jams the wedge against the slide.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 5.—N° 757.

HAMMERSLEY, John.—" Improvements in the construction of marine chronometer boxes."

This invention consists in the construction of the brass boxes of marine chronometers with one or m flexible diaphragms for preventing the entrance of the external air.

The diaphragms are protected when required by a suitable cover.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 5.—N° 758.

DUFRENÉ, Hector Auguste.—(*A communication from Henry Viollet.*)—" Improvements in covers " capsules for jars, pots, and other vessels."

This invention consists in forming covers or capsules as follows :—

A sheet of cardboard or other analogous material is cut into the form and dimensions of the top of vessel to be closed. On the edges of this cardboard is glued or pasted the edge of a ring or band of i rubber ; a sheet of paper or other analogous material is pasted over it, interposing or not a band of pape textile material.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 5.—N° 759.

HUNT, William.—(*Provisional protection only.*)—" Improvements in treating certain compound " copper and iron, and in utilizing residual products obtained in treating compounds of copper and iro

One part of this invention consists in suppressing the evolution of free chlorine in treating burnt py for obtaining the contained copper therefrom. While heating the said burnt pyrites with common salt of steam is introduced into the furnace by which the chlorine which would otherwise be given off is verted into hydrochloric acid gas which is easily condensed. The chloride of iron obtained is accordin another part of the invention peroxidized by exposing its solution to the air in a condensing tower or otherwise, and peroxide of iron precipitated therefrom by calcined magnesian limestone. The clear liquid is treated with calcined limestone, whereby the magnesia is thrown down.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 5.—N° 760.

LAKE, William Robert.—(*A communication from Lyman Reed Blake.*)—" Improvements in mechanism " for preparing soles and for sewing the same upon boots and shoes."

The said invention consists in an improved form and arrangement of two knives or cutters by which a string or long continuous chip is removed from a sole to afford room for embedment of what is known as the chain of a tambour or crochet stitch, the said form and arrangement being such as by mere adjustment of one knife with respect to the other to change the area of the cross section of the chip removed. The said invention also consists in a peculiar method of working the thread whirl or carrier, which being located in the end of the horn of a sole sewing machine operates to lay the thread into the hook or barb of the needle each time the needle is at or about at its lowest point of stroke.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 5.—N° 761.

GEDGE, William Edward.—(*A communication from Léon Cambier.*)—(*Provisional protection only.*)—" Improvements in steam engines."

The object of this invention is to return the steam which has acted on the piston directly into the generator, and these improvements are based upon the principle that a liquid contained in vessels communicating with each other always tends, the pressure being equal, to attain a same level.

The machine is placed above the generator, one of the ends of the cylinder communicating with the bottom of the generator by a tube provided at the boiler end with a valve which, while permitting liquid from the tube to enter the generator, will not permit liquid from the generator to enter the tube, this tube being provided near the other end with a floating piston, beyond which steam from the cylinder cannot penetrate into the tube. The steam from the cylinder condenses in a worm and enters a tube joined to the tube above mentioned by a valve, which will not permit the return of the liquid to the worm.

The engine being at work and the steam acting alternately on each side of the piston, one of the sections of the cylinder is at each stroke in communication with the generator and the other section with the worm; at this moment the valve of the worm opens and the liquid enters the tube under the cylinder, the valve rising again with the floating piston when the level is established. Directly the steam is reversed that which has just acted goes to be condensed in the worm; the compressed steam from the boiler enters the other part of the cylinder; the liquid again seeks its level; and the valve placed in the boiler opens, giving passage to the liquid from the tube until the floating piston comes on to its seat.

These two movements are renewed at each stroke of the piston.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 5.—N° 762.

WESTRAY, John, and FORSTER John.—(*Provisional protection only.*)—" Improvements in machines " for drilling and boring."

This invention consists of a portable drilling and boring machine wherein a bracket is free to slide from end to end of a pillar. A cross bar bearing is capable of being set at any required angle, and a cross bar is free to move within the bearing the whole of its length, the said cross bar bearing carries within a fork at one end a tool stock and hollow spindle, which are keyed together, motion being communicated to the spindle by a wheel keyed thereon in gear with a bevilled wheel on the spindle passing through the cross bar bearing, and to which motion is communicated at the other end by a wheel, pulley, or gearing.

When the position of the tool is once adjusted it will work at any point within range of the machine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 5.—N° 763.

HARTSHORN, James.—(*Provisional protection only.*)—" Improvements in the manufacture of lace in " twist lace machines."

According to this Provisional Specification a net is made double the gauge of the machine; the pillars consist alternately of two fine warp threads and one coarse bobbin thread.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 5.—N° 764.

CLARK, Josiah Latimer.—" Improvements in differential galvanometers."

This Provisional Specification describes attaching a shunt or derived circuit to both of the coils of a differential galvanometer, and providing plugs by which either or both of the said derived circuits can be thrown into operation.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 5.—N° 765.

GOULD, Charles Henry.—(*Provisional protection only.*)—" Improvements in single or combined rivets " for rivetting or securing the soles of boots and shoes or other like purposes, and in the machinery or " mechanical combination for manufacturing or producing them; likewise in the means for grooving or " channeling boot and shoe soles for receiving such improved rivets, and also in the tools or means used for " applying the same."

My improvements relate, first, to the using, and, secondly, to the making of metallic rivets for holding and securing the uppers and soles of boots and shoes together in such a way as to give to the work the appearance of being stitched or secured together with a thread of wire, whereby greater security and more elasticity is ensured.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 5.—N° 766.

FELL, John Barraclough.—" Improvements in or applicable to locomotive engines, carriages, and " permanent way."

These improvements apply mainly to a single line system of railway, or to a double narrow guage line where the two rails are combined together to form a beam; and this system the inventor proposes to combine with some of the improvements, in a modified form, described in the Specifications of his Patents N^os^ 227 and 3182, A.D. 1863, and N° 2174, A.D. 1866.

1. The improvements consist in the use of a single line of rails of girder form and shaped to allow of guiding and gripping wheels, the rails being carried at intervals by supports sunk in the ground.

2. The improvements consist in a locomotive adapted to work upon a single line of rails, the main feature being a double barrel for the boiler, one barrel suspended upon each side, and with the centre of gravity below the bearing surface of the rail. The cylinders are placed above the boiler, and gripping and guiding wheels are used to give extra tractive power if required.

3. The improvements consist in constructing the carriages or waggons in two parts, suspended same as the boiler described under head 2, and provided with guiding wheels.

4. The improvements relate to double line narrow guage railways, and consist in securing the two rails together to form a girder beam.

5. The improvements consist in adapting a locomotive like that referred to under head 2 to the double narrow guage railways referred to under head 4, or an engine having one boiler above the rails and the cylinders below it, and with or without gripping and guiding wheels.

6. The improvements relate to waggons suitable for the double line narrow guage railways which are similar to those referred to under head 3; or the body is placed partly above and partly below the rails, and with or without guiding wheels.

7. The improvements under this head are applicable to locomotives and railways in general, and consist in a mode of cleaning ice or dirt from the surfaces of the wheels (horizontal or vertical) and rails by suitable revolving or stationary cutters, rubbers, brushes, or scrapers, and also in using sand or other material to give adhesion to the wheels by applying fluid or a semi-fluid adhesive mixture, and then adding sand; or by mixing the adhesive material and sand and applying it to the surfaces of the wheels or rails by any suitable means.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, March 5.—N° 767.

DRAKE, Harry.—(*Provisional protection only.*)—" Improvements in the preparation of essences suitable " for soups and sauces."

This invention consists in the manufacture of soup or sauce essences by the preparation of ham, vegetables, herbs, seasonings, and other usual ingredients of soups, to which is added a flour by preference " Prested's prepared roux," and an essence of meat, by preference Liebig's essence of meat or glaze, the whole being thoroughly mixed or incorporated together.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 5.—N° 768.

CONYBEARE, Henry.—(*Provisional protection only.*)—" Improvements in the manufacture of rails for railways,"

This invention relates to the treatment of rails for railways so as to render their surfaces harder than hose at present usually employed, and consists in chilling the surface of the rails by placing the same after oming from the rolling mill so that water may be brought in contact with the whole or the upper portion nly of the rail. Arrangements may be made for the purpose of keeping the rail in proper shape and position whilst under treatment.

[Printed, *4d.* No Drawings.]

A.D. 1868, March 5.—N° 769.

NEWTON, Alfred Vincent.—(*A communication from David Dunham Stelle.*)—" Improved apparatus for " cultivating land and sowing seed."

An intermittent discharge of seed is obtained by slides set in action by tappets on main axle, and for cultivating the ground a combination of rotary and fixed tines or blades is used.

[Printed, *8d.* Drawing.]

A.D. 1868, March 5.—N° 770.

CLARK, Alexander Melville.—(*A communication from Pierre Augustin Samuël.*)—" Improvements in " steam pumps."

According to these improvements the air pump is dispensed with, the vacuum being obtained by means of a valve placed in communication with the suction pipe of the pump.

The rod carrying the water and steam pistons is furnished with a slotted frame, in which works a crank shaft; on this shaft is keyed an eccentric which works in a similar slotted frame in the rod of the slide valves, said valves being operated by the eccentric regulate the distribution of water and of steam to the water and steam cylinders. The steam after escaping at the ports raises the valve communicating with the suction pipe, into which it passes and is there condensed.

[Printed, *1s. 4d.* Drawings.]

A.D. 1868, March 5.—N° 771.

DICKSON, James.—(*Provisional protection only.*)—" Improvements in lubricators or tallow feeders."

This invention is applicable to the cylinders of steam engines, and consists in the use of a perforated cup and a perforated reservoir, between which revolve two rings penetrated by a small tube. The tallow or other lubricating material passes through a perforation in the reservoir to the tube penetrating the rings, and thence into a perforation in the cup, whence it is conveyed into the cylinder by means of a pipe or tube communicating therewith. A stop pipe also communicates directly between the reservoir and cylinder.

[Printed, *4d.* No Drawings.]

A.D. 1868, March 6.—N° 772.

PRICE, Daniel, and ROWE, Charles.—" Improvements in apparatus for combing or cleaning animals."

The apparatus consists of a conveniently shaped receptacle, one side of which is composed of a comb set at an angle to a jointed piece, which moves freely within the sides of the receptacle and closes it on the under side by means of a spring which keeps it in contact with the lower edge of the comb when not in use and in contact with the coat of the animal when in use.

By its action animals are combed and the parasites infesting them are removed and at the same time collected in a receptacle.

[Printed, *8d.* Drawing.]

A.D. 1868, March 6.—N° 773.

PULVERMACHER, Isac Louis.—" Improvements in apparatus or means for producing, applying, and " ascertaining the power of electric currents."

1. Single liquid battery for constant currents.—A copper plate is stamped with projecting fillets between slots, and a zinc plate is stamped with corresponding fillets. The two plates are brought as close together as possible, the fillets of one taking between those of the other, but metallic contact is prevented by india rubber threads. The two plates form one element, and a series of elements are connected to form a voltaic pile or a chain or band. In applying them they rest on the edges of troughs containing the liquid, so that the zinc is below and the copper above the level of the liquid.

2. Automatic current breaker.—A steel spring is secured edgewise at one end to an insulated plate in a metallic case; the other end is weighted, and a handle of insulating material is pivoted thereto: a wire passes lengthwise through the handle, and is connected to one pole of the battery. When the handle is moved on its pivot an arm presses the weighted end of the spring to one side and then releases it so that it vibrates. In its vibrations it strikes against a pin in metallic communication with the case, the current is thus alternately broken and reunited.

3. Instrument for ascertaining the power of currents.—The conductor is led into a glass vessel containing colored water; another conductor leads from the vessel to a metal case surrounding the vessel. The current decomposes the water, and the gases formed force the water up a capillary tube which is inside a graduated tube; the height to which the water rises shows the power of the current. The amount of electricity which enters the body of a person to whom the metal case is applied can thus be ascertained; the power of currents for other purposes can also be ascertained by this instrument.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 6.—N° 774.

BRINSMEAD, JOHN.—" Improvements in the construction of pianofortes."

An improved action for the purpose of obtaining a repeat. A spring with a hook is attached to the sticker or hopper, and from the hook a loop is carried through or past the striker to the butt under the notch. The loop and spring combined act as a tie-leather. The sticker has an incline at top to press on the front of the notch after the escapement. Sometimes the position of the spring and loop are reversed, the spring being fixed to the butt and the loop to the sticker.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 6.—N° 775.

STANLEY, JOHN MARTIN.—" Improvements in the construction of furnaces."

These improvements in the construction of furnaces, applicable to smelting ores, melting iron or other metals, and to other furnaces where intense heat is required, and in arrangements for doing away with the use of fire bars in furnaces and other places for generating heat, consist in a novel manner of generating the heat in a separate fire place or chamber, and conveying or propelling it to the part where it may be most efficaciously applied, the heat passing entirely into the bottom of and amongst the iron or other metal or ore, or immediately upon the parts to be heated.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 6.—N° 776.

WHITTAKER, THOMAS.—" Certain improvements in the preparation of paper to be employed in the " manufacture of waterproof paper."

The novelty of the invention consists in rendering the surface of paper which is subsequently to be waterproofed irregular or of uneven thickness, and not level and smooth to enable it to receive and hold waterproofing materials and be more durable and pliable when waterproofed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 6.—N° 777.

EASTWOOD, JAMES.—" Improvements in machinery for preparing size, and in machinery or apparatus " to be employed in the sizing of yarn and other fibrous materials and fabrics."

This invention firstly relates to the employment of levers or pulley blocks for raising and lowering the " dashers " employed in washing flour for size.

Secondly, to the use of concentric cylinders forming a space or vessel in which to boil size, and in the employment of a coiled or helical pipe for conveying the size thereto, and in the use of a lever tappet or rack for working a tap (in a pipe communicating with the boiling apparatus and the size box) so as to maintain a uniform supply of size to the said box; and, lastly, to the use and employment of a fan and blast of hot or cold air for drying the yarn, fibre, or fabrics after sizing.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 6.—N° 778.

HAUXWELL, GEORGE, and **RYDER**, JAMES.—(*Provisional protection only*.)—" Improvements in preparing hard foreign wheat for manufacturing into flour, and in apparatus to be employed for such " purpose."

Our invention consists in imparting to the wheat by self acting mechanical means just a sufficient amount of dampness or moisture to produce the desired effect, the wheat being at the same time kept in motion, so that each grain receives its proper amount of moisture and no more. Hard foreign wheat after undergoing our improved process will be in a fit state for grinding in a few hours.

The apparatus which we propose to employ for this purpose consists principally of a vessel or trough (of zinc, sheet iron, or other suitable material) placed in a horizontal or slightly inclined position. Inside this vessel is a worm or screw, which is caused to revolve slowly by means of a strap and pulley or other suitable gearing. This worm or screw revolves in contact, or nearly so, with a perforated metal plate or false bottom. At one end of the vessel or trough is a hopper for introducing the wheat, and at the other is an opening or spout for the delivery of the same. Close to the hopper is a pipe from a tank of cold water, the lower end of the said pipe being furnished with a finely perforated rose or distributor.

This pipe is provided with a regulating tap, and the hopper is fitted with a valve or sliding door. Below the false bottom is a waste pipe for carrying off the superfluous water.

[Printed, 4d. No Drawings.]

A.D. 1868, March 6.—N° 779.

LANGWELL, WILLIAM, and SPRING, HENRY.—"Improvements in the manufacture of bottles, and in "the apparatus to be employed therein."

According to this invention a hollow cylinder is mounted horizontally or standards through which a spindle passes connected to a lever or levers with a crank motion inside the head of the cylinder.

Dies are attached to two arms fixed to the spindle by means of two rocking levers, whereby they are opened and closed by means of a sliding rod, which contracts or expands them in order to form the bottle neck by their revolution around the same.

A plug attached to a face in front of the cylinder enters the bottle neck and holds it in position.

[Printed, 8d. Drawing.]

A.D. 1868, March 6.—N° 780.

WATSON, JOHN.—*(Provisional protection only.)*—"Improvements in blast furnaces and in obtaining a hot "blast for the same."

This invention consists, firstly, in contracting blast furnaces at one or more elevations. Secondly, in methods of heating air for blast furnaces by means of waste heat derived therefrom.

[Printed, 4d. No Drawings.]

A.D. 1868, March 6.—N° 781.

ATKINS, THOMAS.—*(Provisional protection refused.)*—"Improvements in gloves or apparatus to be applied "to the hands and feet to facilitate swimming."

This Provisional Specification describes constructing gloves suitable to be drawn over the hands or feet, and having air chambers or vessels formed upon them or with plates of cork attached thereto by bands. In the case of gloves for the hands the fingers are connected with one another by a flexible membrane also capable of being inflated.

[Printed, 4d. No Drawings.]

A.D. 1868, March 6.—N° 782.

ATKINS, THOMAS.—*(Provisional protection only.)*—"Improvements in apparatus for extinguishing fire."

This Provisional Specification describes apparatus for charging water with carbonic acid gas and for distributing or applying such water in the state of spray at any point desired.

[Printed, 4d. No Drawings.]

A.D. 1868, March 6.—N° 783.

ATKINS, THOMAS.—*(Provisional protection only.)*—"Improvements in feeding bottles for infants and "invalids."

This Provisional Specification describes constructing feeding bottles in such manner that fluid may be withdrawn therefrom without any air being allowed to enter therein.

[Printed, 4d. No Drawings.]

A.D. 1868, March 6.—N° 784.

PARKER, JAMES.—*(Provisional protection only.)*—"Further improvements in apparatus for obtaining "motive power for engines by a combination of steam and air, and for the prevention of racing in steam "and air marine engines, and for a condenser applicable to steam and air engines, and for other purposes."

One novelty consists of an improved apparatus for mixing and combining and superheating steam and air for user in lieu of steam as a motive power for engines. The compound non-superheated is practically non-expansive. When sufficiently superheated it is highly expansive. The saving of fuel, as compared with the engines driven by steam alone, is very great, and by using the steam and air non-superheated the racing of marine steam and air engines in a sea way is prevented. Another novelty is the apparatus for supplying the boiler with hot feed water by utilizing for this purpose the heat of the exhaust steam and air, and this in conjunction with or separate from a further novelty, namely, a new condensing apparatus applicable for the steam and air engine. The last novelty is the obtaining a slight power with great velocity by means of highly superheated steam and air without any engine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 6.—N° 785.

HOUSTON, James, the younger.—" Improvements in the manufacture of composite candles, and in the " machinery or apparatus employed therein."

Making composite candles with two or more wicks by a continuous process, and using for that purpose a modification of the machine for which Letters Patent were granted to John Talbot Pitman, N° 2556, A.D. 1857.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 6.—N° 786.

TONGUE, John Garrett.—(*A communication from Auguste Léon Bézy and Isidore Agnan Desnoyers.*) —" Improvements in the construction of steam boilers."

This invention has for its object the application to steam boilers or generators (of all kinds and dimensions) of inclined cylindrical or conical tubes in which the water circulates and are surrounded by flames and highly heated products from the furnace for the purpose of establishing a continuous circulation of the water, rapid vaporization being thus affected with great economy of fuel and the prevention of incrustation to a considerable extent. The arrangement and construction of these improved steam boilers also affords increased facility for changing and cleaning the tubes.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 7.—N° 787.

HARGREAVES, Henry. — (*Provisional protection only.*) — " Certain improvements in looms for " weaving."

The novelty of the invention consists in supporting a roller parallel and in contact with the so called sand roller of looms for weaving and around which the cloth from the breast beam is caused to pass previous to its passing around the so called sand roller on to the cloth roller; by this means the upper roller is by the tension of the cloth caused to press and exert a pressure upon the cloth in its passage to the cloth roller that dispenses with the surface of the so called sand roller being roughened as hitherto.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 788.

CAMPBELL, James.—" Improvements in floating docks."

The first part of the invention consists in constructing trays with the transverse ribs sufficiently close to allow a deck of stout planking to be laid on them and a vessel to be shored, as in a stone dock. The trays when required are constructed with conical ends or cutwaters to adapt them for carrying ships with cargoes over shallows or up rivers.

The second part consists in constructing docks as light as possible and of great width, with only two chambers transversely, one on each side of a partitition, from which the water will have to be pumped on raising the vessel. This dock is adapted for the use of trays for large vessels. There are no upper load chambers nor lower air chambers.

The third part consists in adapting and using docks of this kind for river steamers.

The fourth part relates to improvements in belts for repairing docks, which consist, first, in enlarging the tanks at the ends thereof and inserting bulkheads to enable the water tight joints of the belt proper to be raised out of the water for adjustment and repairs without docking; and, secondly, in securing vulcanized india rubber in bands in dovetailed grooves in the woodwork of the water tight joints.

And the last part of the invention is a water guage composed of a reservoir of compressed air at from 40 to 50 pounds pressure per square inch, communicating by taps with small pipes branching off to the lowest parts of the various compartments in which the level of the water is required to be ascertained.

[Printed, 3*s*. 10*d*. Drawings.]

A.D. 1868, March 7.—N° 789.

BROWN, Sidney.—"An improvement in the method of ornamenting bottles, vases, and jars used for "perfume or toilet purposes."

To combine with a perfume or toilet bottle, vase, or jar a portrait case or locket by inserting in or fixing to the sides or top of the said bottle, &c. a small casket or case capable of being opened and closed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 790.

LEAKE, Robert, and PLATTS, Richard.—"Improvements in machinery for etching or engraving "rollers for printing."

This invention consists in applying to the machines known as eccentric engraving machines and pentagraph machines two mandrills and rollers whereby both the rollers are etched or engraved simultaneously.

The rollers are mounted on the mandrills in the usual manner, and they are connected by wheels or otherwise, and so that their relative motions may be varied.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 7.—N° 791.

SYMONS, Hermon.—"Improvements in fire guards and fire screens."

The fire guards and screens are constructed of separate pieces of plate metal or wire work in the form of leaves or fans or any other suitable design. Each of such leaves or fans is attached to a small metal wheel or segment of a wheel provided with a groove or chamber into which one end of the leaf or fan fits. The wheels or segments of wheels are mounted on an axis, and are free to revolve thereon, and are provided with projections and recesses gearing into each other so that upon the outer wheel being rotated (by means of a knob or handle) the other wheels or segments of wheels are actuated, and the fans or leaves expanded or folded up as may be desired.

The novelty of this invention consists in constructing fire guards and screens as above described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 792.

SIMMONDS, Henry.—(*A communication from Alexander Hague Simmonds.*)—(*Provisional protection only.*) —"Improvements in machines for hulling or decorticating cotton or other like seed."

A cylinder with longitudinal ribs or teeth rotates rapidly in front of a concave surface with corresponding teeth; the teeth of the cylinder have thin steel caps or covers which come up to an edge about $\frac{1}{16}$th of an inch wide. The concave is not concentric with the cylinder, so that only one at a time of the teeth of the cylinder may be sufficiently near the concave to crack the hulls of the seeds, the distance being such that the kernel is not hit. The seed is fed between the cylinder and concave, and the hulls and kernel are collected in a receptacle below.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 793.

BROOMAN, Clinton Edgcumbe.—(*A communication from Firmin Natalis Thuillier-Gellée.*)—"Improvements in combing machinery."

In combing machines on Noble's system, which have a large and small rotating circular comb, an oblique circular comb is added concentric with and a little larger than the small comb. At the tangential point of the two ordinary combs the pins of the oblique comb are below the level of the others, but where the combed fibres are drawn from the small comb the oblique comb is at the same level, and an additional brush which is combined therewith holds back the knots of fibre on the oblique comb so that only the properly combed fibre is taken by the drawing appliance. The additiomal brush may be circular, or it may be flat and have reciprocating motion imparted to it from the ordinary brush. A special arrangement of gearing is described for driving the large comb in case the oblique comb should interfere with the ordinary mode of driving.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 7.—N° 794.

KIRK, Alexander Carnegie.—(*Provisional protection only.*)—"Improvements in treating cast iron."

This invention consists in cooling melted cast iron in successive layers, which may be conveniently done, for example, by cooling the surface of a quantity of the melted cast iron by the application of water or otherwise by removing the layer of cast iron, which sets, and by repeating the operations of cooling the surface and removing each set layer as often as desired.

The effect of these operations is to cause the sulphur and phosphorus to accumulate in the later layers, so that the earlier layers are freer from those substances.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 795.

BERRY, WILLIAM.—(*Provisional protection only.*)—" Improvements in footsteps for upright spindles and " shafts."

The novelty consists in,—

The forming or constructing of foot-steps with an annular cavity or recess in the top part to contain oil or other lubricant, having a hole through at bottom into the ordinary cavity to supply the lubricant thereto.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 796.

TOOTH, ROBERT. — " Improvements in the evaporation of liquids and in apparatus to be employed " therein."

This invention relates to the evaporation of saccharine, saline, and other liquids for the purpose of rapidly and economically concentrating the liquids with a view to obtaining the saccharine, saline, or other substances contained therein in a dry or crystalline state. This I propose to effect, first, by bringing currents of heated air into contact with descending streams of hot liquor desired to be concentrated.

2nd. When exposure to air is injurious to the liquor I discharge the hot liquor in a shower into a vacuum chamber.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, March 7.—N° 797.

CHEVALIER, ROBERT MAGNUS.—" An improvement in the manufacture of the blinds usually called " ' Venetian ' blinds."

The novelty in the invention is the use of wood for the laths cut to a thickness of the 24th part of an inch, and so prepared as to resist the action of the sun's heat, & at the same time to possess greater elasticity with equal strength to the Venetian blind as heretofore prepared. Process of preparation as follows :—

The sap of the wood is extracted by hot pressure, & a preparation, consisting of glue, shellac, muriate of iron, and allum, is pressed into the wood by means of a force-pump, rendering the latter hard, straight, and proof against damp, & alike fitting the blind for outside and inside purposes.

Mode of hanging consists of rings affixed to the tapes by which the latter are suspended, so that the blind can be hooked on & off with great facility.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 798.

THOMPSON, JOSEPH, and THOMPSON, JOHN—" Improvements in fixing door and other knobs, and " in connecting knobs to spindles."

This Provisional Specification describes a mode of fixing door knobs and lock knobs to spindles by forming a V groove around the boss or stem of the knob. A rose or plate is fixed on the door, and screws are passed through the sides of this rose, which projecting into the groove on the stem of the knob hold it on the door, but allow it to turn round.

Some modifications are also described.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 7.—N° 799.

WARNER, WILLIAM HARDING, and MURRAY, ROBERT CHARLES.—(*Provisional protection only.*)— " Improvements in stereoscopes."

This Provisional Specification describes making stereoscopes with the platform on which the picture rests at a greater distance than heretofore from the prism or lens, also making the prisms or lenses very thin, and making their convexity greater on the side towards the picture. By these means the stereoscope is enabled to exhibit pictures of a larger size than heretofore.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 7.—N° 800.

GREENER, WILLIAM WELLINGTON.—"Improvements in central-fire breech-loading guns and pistols."

My invention relates to improvements in the strikers or pistons of central fire breech loading fire-arms. Instead of putting a spring to throw back the strikers I draw the said strikers back by means of the hammers, which is accomplished by making a peg on the pistons which projects over the breast of the hammers. I make a hook on the breast of the hammers which catches the said projections on the pistons and draws it backwards when the hammers is brought to half cock, and travels with the hammer to full cock. When the trigger is pulled the hammers drive the said pistons with considerable force upon the cartridge. It also relates to breech loading pistols with under and over barrels which open sideways for loading. The cartridges are exploded by strikers or pistons being placed one above the other, the said pistons being struck by the tumblers of the locks.

[Printed, 6d. Drawing.]

A.D. 1868, March 7.—N° 801.

BAYNES, FREDERICK JAMES.—"Improvements in kitchen ranges and parts connected therewith, which "improvements are also applicable to other cooking stoves."

The invention relates to applying part of the front bars in a frame capable of turning on centres in front so that such bars may at one time be turned inwards to form a bottom for the fuel to rest upon and at another time form as heretofore part of the front bars of the grate in front of the fuel.

The improvements are also applicable to other cooking stoves; or a like benefit of heat to the oven and boiler may be obtained by applying the bottom bars at or about a line with the openings to the flues under the hot plate to the oven or boiler.

Also, the invention relates to applying two boilers, one over the other, at the side of the fire place, the upper boiler being shallow and supplied by a side cistern to obtain steam for steaming purposes, the lower, which is supplied from an elevated tank, being for hot water bath or other hot water purposes. The flue way is between the two boilers. The ash pan is provided with a grating upon which the cinders rest, whilst dust and dirt pass through to the pan. The grating is provided with a handle by which it may be used to throw the cinders again on the fire.

[Printed, 10d. Drawing.]

A.D. 1868, March 7.—N° 802.

CASPER, EDWARD.—(*A communication from François Nicolas Santenard.*)—(*Provisional protection only.*)—"An improved apparatus for raising and forcing liquids, more especially designed for supplying water to "steam boilers."

The said invention relates to an apparatus wherein water or other liquid is forced by a current or blast of steam or other fluid through a tube or passage into which the water or other liquid is admitted through an aperture or apertures at the sides of the said passage. The said apparatus consists essentially of peculiarly arranged tubes, pipes, or passages, one for the steam or other forcing fluid, and the other or others for the liquid to be raised or forced. The said tubes are arranged at an angle to each other. The tube or passage through which the steam or other forcing fluid passes is larger than the other through which the liquid is drawn. The aperture through which the water or other fluid enters the main tube or passage is formed in front of a stop or obstruction which partially arrests the flow of the steam or other fluid through the said main tube and forms a partial vacuum in front of the said aperture. The liquid thus enters freely into the main passage or tube in front of the partial obstruction or stop, and is there caught by the impelling fluid which has at this point regained its normal velocity, the liquid being carried forward with the said fluid into the vessel or receptacle to be filled.

[Printed, 4d. No Drawings.]

A.D. 1868, March 7.—N° 803.

KOCH, PHILIPPE.—"Machinery for making metallic nuts."

The object of my invention is to make metallic nuts of all the ordinary sizes used in the various arts and manufactures, and to finish them uniformly in the most perfect manner and with the greatest facility.

My invention consists, first, in the employment of two series of cutting dies secured to movable frames and slides, so as to be operated together. Second, in the combination of two series of cutting dies with corresponding series of punches and semi-rotating shafts for transferring the nuts to the finishing mechanism. Third, in the combination of the series of punches with series of spindles, and the means for transferring the nuts from the punches to the spindles. Fourth, in movable crowning die plates with recesses in their upper edges for the reception of the punches by which the nuts are placed in the crowning dies to be manipulated and finished. Fifth, in movable frames for mounting the spindles and pinions, rack-bars, levers, and cams for operating the spindles to turn the nuts between the crowning dies and compressing bars and hammers. Sixth, in the arrangement of hammers to be operated by rock shafts and cogs on a wheel in combination with the compressing bars and die plates for manipulating and finishing forged nuts. Seventh, in the arrangement of connecting bars or rods placed on both sides of the frame and so attached to the hubs of the rock shafts as to reverse their motion. Eighth, in the employment of wire cords or chains arranged and combined with rollers, levers, and cams for operating the semi-rotating shafts alternately to the right and left. Ninth, in the arrangement of a follower suspended on arms of a rock shaft, and in the means provided for causing the said follower to descend upon and hold the bar of iron from which the nuts are cut firmly upon the rest bar. Tenth, in the arrangement and combination of spur gear wheels with the main cam shafts placed at both ends of the machine, which shafts give the required power and motion to all of the working mechanism for cutting, punching, and forging nuts.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, March 9.—N° 804.

LEE, Henry Michael.—(*Provisional protection only.*)—" Improvements in cases employed to contain " visiting or address cards."

This invention relates to modifications in the construction and proportions of card cases, by means of which they become applicable to be worn on the person as an article of jewellery. The said cases are made less in size than is usual and of gold, silver, wood, leather, or other suitable metal or material, and ornamented with chasing, enamelling, precious stones, or in any suitable manner, and are fitted to be worn as brooches, bracelets, buckles, pendants to watch chains, or are otherwise fitted to be worn as an ornament. They are sometimes fitted with a tablet and pencil and with a spring or springs to push up the cards so as to admit their easy withdrawal.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 9.—N° 805.

JEAVONS, Joshua.—(*Provisional protection only.*)—" Improvements in the manufacture of tyres for " railway and other wheels."

These improvements consist in making tyres from bars composed of hard and soft metals welded together in the bar, and in coiling with the harder substance (hard crystaline iron or steel of any description) outside to form the wearing portion of the tyre, the softer portion (fibrous or tough iron) being inside. The coil is then welded, hammered, and rolled by any of the ordinary processes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 9.—N° 806.

HARTLEY, William.—" A machine for preparing and conditioning yarn."

In preparing extra hard twisted yarn suitable for the Levant trade the operation of stretching and slackening the hanks to distribute the snarls or short curls evenly has been performed by hand ; now my invention consists in a self acting machine for effecting the object. The machine consists of two sets of pegs, one row being stationary, but revolving on their axes, and the other moving to and fro; but other combinations of machinery may be used to produce the same result.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 9.—N° 807.

BARLOW, Henry Bernoulli.—(*A communication from Charles Auguste Veillon.*)—" Improvements in " machinery for carding, combing, and straightening the fibres of cotton and other fibrous substances."

This invention consists in placing round a common centre several apparatus for carding, combing, and preparing fibrous substances; the apparatus are carried by a drum, and are fed by nippers or feeding rollers. The fibres are operated upon simultaneously on the exterior and interior sides the of apparatus, and the short fibres and impurities are separated from the long fibres uninterruptedly as the work proceeds. A grinding apparatus may be applied occasionally to sharpen the card teeth or other carding or combing agent.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 9.—N° 808.

ABEL, Charles Denton.—(*A communication from Frederic Tudor.*)—" Improvements in screw bolts and " nuts for securing fish plates and other objects."

This invention consists in forming screw bolts with two threads of a different pitch, the ends of the bolt ide square or polygonal and less in size than the bolt. Each thread of the bolt is provided with a uranged as not to turn on its seat, and formed for this purpose, by preference, either hemi- with a square or polygonal projection on the flat side fitting into a corresponding recess in the be secured, or the nut is made semi-cylindrical, the curved part fitting into a recess in the object. may in some cases be dispensed with and the threads cut in the fish plates or other object. bolt is turned the two threads of different pitch cause the two nuts on the ends of the bolt to each other and thus to nip the object situated between them very powerfully.

d, 8d. Drawing.]

A.D. 1868, March 9.—N° 809.

ELD, Louis.—(*A communication from Alois Christalon.*)—(*Provisional protection only.*)—"Improve- in the construction of cigar tubes and pipes when used in combination."

velty of this invention consists in adapting the bowl of a pipe to a cigar tube, so that the tube may ither as a cigar tube for holding a cigar, or by constructing the bowl of a pipe so as to fit into the e; the said tube may be converted into a pipe.

d, 4d. No Drawings.]

A.D. 1868, March 9.—N° 810.

Augustus Fraser.—"Improvements in earth closets applicable also to urinals."

er for supplying the earth, a shoot, or valve, or flap box, and a receptacle for deposits are used as angements patented by the same Inventor, 15 August 1867 (N° 2351, A.D. 1867). By the present the weighted flap or valve is made with the weighted part angled in regard to the non-weighted latter having a projecting part at its back of sufficient size to form a flap or valve for closing the from the hopper at the same time that the weighted part is leaving the entrance from the shoot or to the receptacle for deposits open. Another smaller projection is placed just behind the angle, acted upon by a rail, rod, or other contrivance attached to the closet seat, which is moveable, so that by sitting on and getting off the same actuates the said mechanism, or it is actuated by a moveable ther contrivance, which latter are the arrangements suitable for urinals. Stirring rods for agitating when required are made to work by the action of the weighted flap or valve.

d, 10*d.* Drawings.]

A.D. 1868, March 9.—N° 811.

G, William.—(*Provisional protection only.*)—"Improvements in pockets or purses formed or in gloves, and in the mode of securing railway tickets, money, or other contents deposited therein e keeping."

ture of novelty in my said invention consists in forming or placing into the interior or on to the f gloves near to the palms and wrists of the wearer's hands pockets or purses, and securing for ing the contents deposited therein by means of elastic bands or cords placed and fastened to the top surfaces of such pockets or purses, and fastening other elastic bands to the gloves so placed that cover and overlap the bands or cords and the entrance to and top surface of the pockets or purses fore described.

d, 4*d.* No Drawings.]

A.D. 1868, March 9.—N° 812.

, Henry.—"Improvements in the construction of organs."

ention relates, 1st, to weighting the organ bellows by weights suspended from springs. 2nd, to f a vacuum and air at a pressure to transmit motion to distant parts of organs; for example, to slides. 3rdly, to the production of the vacuum by means of a modified organ bellows. 4thly, to al of the action by converting a vacuum trunk into an air trunk, and vice versa.

d, 5*d.* Drawing.]

A.D. 1868, March 9.—N° 813.

N, Peter William.—(*Provisional protection only.*)—"Improvements in machinery for constructing s."

rovisional Specification describes forming tunnels by forcing forwards a cylinder into the ground ving the earth from within the cylinder to allow of an iron or other lining for the tunnel being ether within the rear end of the cylinder. The forward end of the cylinder is closed, with the exception ning at or below its centre, so that should water break into the end of the tunnel the upper part of l may always be kept full of air.

d, 4*d.* No Drawings.]

A.D. 1868, March 9.—N° 814.

MOREWOOD, Edmund.—" Improvements in coating metal plates and in apparatus used therein."

According to this Provisional Specification a frame or frames are arranged in a pot containing hot grease, flux, or metal, and carrying the plates around in a circuit with the edge of the plate foremost from the filling point to the emptying point. In the case of coating metal the surface of the entering point is covered with flux, elsewhere the surface of the metal is covered with sand or similar material.

The metal pot is made with an overflow for the metal, with flux and scum on its surface, and melted metal is run in continuously or at intervals, and after it has run over it is pumped back.

In some cases a metal pot with upright pins in it is used.

When rollers are used the axis or spindle which runs in the bearing is made separate from the roller and clutches with it.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 9.—N° 815.

HALSEY, William Henry.—" A new and improved process for making articles from hard rubber and " from other substances capable of being moulded in dies, and at the same time inlaying or inserting in and " attaching to such articles metallic and other plates for useful or ornamental purposes."

The object of the invention is while forming or shaping the article to secure to it a hinge or plate or other useful or ornamental contrivance of metal or other rigid material. Recesses are made in the dies rather larger than the appliance to be inserted (in the article) in order to receive the appliance or contrivance, or a part or parts thereof, so that when the material to be moulded is placed in the dies and pressure applied the material will be forced over, round, or on the plate or contrivance, and the former and latter will be connected together. To render the connection more secure blunt pins with partially flattened heads or roughened sides may be attached to the plate or contrivance, the material pressing or fastening itself round them, and the plate, device. or contrivance may be bevelled at the edges. When plates or figures are to be inlaid so as to be smooth or plane with the surface, they are formed at back with blunt pins with flattened ends or roughened sides, or their edges are bevelled and they are laid in the die and the material to be moulded is placed in the dies and pressure applied. When the plates or figures are to be in relievo the die is recessed in the shape of the same to a depth equal to its intended ultimate projection.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 9.—N° 816.

CLARK, Alexander Melville.—(*A communication from Guillaume Toselli.*)—(*Provisional protection only.*)—" Improvements in the means and apparatus employed for freezing liquids."

The apparatus is chiefly applicable for producing small quantities of ice, and consists of a vessel with a flange at top, in which is placed a smaller vessel having an india-rubber flange, the whole being closed by a cover having a screw for holding it in position. The freezing mixtures I employ consist of subcarbonate of soda and hydrochlorate or nitrate of ammonia in equal parts to four parts of water; or I introduce into the smaller vessel one part of water or other liquid to be converted and two equal parts of water and of each salt in the outer vessel. I then shake the whole for about six minutes for icing the contents of the inner vessel, or ten minutes for converting the contents into ice.

I use beech wood cases to contain the refrigerating salts instead of the glass, stoneware, or metal cases heretofore used.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 9.—N° 817.

HALBARD, Philip Fanckes.—" Improvements in stench traps."

This Provisional Specification describes constructing a stench trap with three traps in one, the water being at two different levels in these traps. Also making one of the partitions of the trap moveable to facilitate cleaning.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 9.—N° 818.

LAKE, William Robert.—(*A communication from Robert Orpheus Lowrey.*)—" Improvements in the " treatment of fibrous materials for the manufacture of various articles and in the means for rendering the " same fire and water proof."

My invention relates to a new composition of matter consisting principally of vegetable fibre treated or united with certain chemical ingredients, for the production more especially of a water proof material for the manufacture of paper and all other articles to which it may be adapted, the composition being intended to produce an article much stronger than ordinary paper, and one that will not lose its strength when subjected to the action of water. In treating the fibrous materials I use common salt in combination with any of the salts of alumina or similar astringent material. I also use alum when a soapy compound has been incorporated with the fibre. I also use glycerine in combination with a soapy compound. To render the fibres or articles fire proof I use sulphate or phosphate of sòda or similar materials.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 10.—N° 819.

SLATER, James.—(*Provisional protection only.*)—" Improvements in heating the feed-water for steam " engine and other boilers to economize the consumption of fuel and feed-water and in apparatus " therefor."

My invention consists in the combination of a metallic dome or cistern into which I insert a number of tubes, or a coil or spiral tube through which the feed water passes in its course to the boiler. The configuration of the dome or cistern I vary so as to adapt it to locomotive or any other kind or form of high pressure steam engine, and it may be fixed on the smoke box or in any other convenient position, so as I can use the hot gases as they escape from the furnace in connection with the exhaust steam for heating the feed water to a high temperature. But in some cases I prefer using only exhaust steam for the aforesaid purpose.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 10.—N° 820.

KINSEY, William Barns.—" Improvements in apparatus for carburetting or increasing the illuminating " properties of coal gas."

According to this invention the carburetting vessel is divided into a gas or carburetting chamber, and a reservoir for the carburetting liquid by a horizontal diaphragm. The upper chamber through which the gas passes may contain a nother diaphragm, and both are covered with felt or other absorbent material kept moist by cotton wicks dip ping into the reservoir below. A single or double spiral or tortuous gas passage is formed above each felt surface, the spiral partition forming the passage having its lower edge pressed firmly down or partly embedded in the surface of of the felt. In order to show the height of the liquid in the vessel a lever carrying a float is contained inside the liquid reservoir and communicates by a wire with the interior of a glass indicator tube protected by a brass tube screwed into a socket on the top of the carburettor, a leather washer at the top and bottom of the glass tube serving to keep the joint vapour tight.

[Printed, 10*d.* Drawing.]

A.D. 1868, March 10.—N° 821.

ABEL, Charles Denton.—(*A communication from Jules Gabriel Alfred Gros.*)—(*Provisional protection only.*)—" Improvements in the production of brown colouring matters for dying and printing."

This invention consists in obtaining brown colours of different hues for dying or printing silk and woollen fabrics by means of a compound of nitric, nitrous, oxalic, alsetic, and chrisamic acids, with or without the admixture of mordants. Various tints are obtained, according as the one or the other acid predominates in the compound, and also by steeping the fabric after dying in either boiling alum, cupric nitrate, stannic chloride, stannous chloride, or ferrous sulphate.

The fabrics should be steeped at a temperature of 86° Fahrenheit, and the temperature of the bath be then raised until the requisite tint has been attained.

For printing, the above compound is mixed with gum water, strained, evaporated, and levigated, and, if requisite, incorporated with the above named or other mordants.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 10.—N° 822.

DESBOROUGH, Spendlove.—(*Provisional protection only.*)—" Improvements in apparatus for cleaning " and polishing knives, forks, or other articles or surfaces."

This invention relates to improved arrangements of apparatus for cleaning and polishing knives, forks, spoons, or other articles or surfaces in which oscillating or vibrating parallel rubbing surfaces are arranged to act in the direction of the length of the knives, forks, or other articles to be cleaned or polished.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 10.—N° 823.

JONES, James.—(*Provisional protection only.*)—" Improvements in finishing, straightening, and punching " rolled railway and other bars of iron and steel."

The first part of this invention relates to apparatus for finishing off the ends of railway and other forms of bars of iron or steel by removing the burr or ragged edges caused by cutting off the ends (to proper length of bar) by circular saws as is well understood.

According to the second part of these improvements in order to obtain perfectly straight bars they are placed and clamped whilst hot in channels or grooves formed in cast iron boxes or plates, the grooves in the two parts of the box or plate by preference corresponding in form with that of the railway or other bar they are intended to receive. By this means the bar thus enclosed in grooves between the two cast iron surfaces will set perfectly straight when cold.

According to another part of these improvements the grooved boxes or plates are formed with holes or openings in order that the holes for the fish plates or other purposes may be punched whilst the bar is hot and securely held within the box or between the plates.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 10.—N° 824.

MELDRUM, Robert.—(*Provisional protection only.*)—" Improvements in apparatus for raising water."

The improved apparatus comprises a cylinder placed vertically and having a piston working inside of it. Valved inlets and outlets for the water like those of a common double acting pump are arranged in connection with the space below the piston, whilst the steam from a boiler has access at intervals to the space above the piston by a valve worked by the piston rod. When the piston reaches the bottom of its stroke it uncovers a number of openings in the side of the cylinder, by which water from below the piston enters into the space above it, and the steam valve being then shut the steam above the piston is immediately condensed and a vacuum formed. The atmospheric pressure then causes the water to rise up the suction or inlet pipe and to enter under and carry up the piston. On the piston reaching the top of its stroke the steam valve is opened, and the steam entering causes the piston to descend and to discharge the water below it. The water that gets above the piston together with that due to the condensation of the steam passes down through a tubular extension of the piston rod. This tubular rod has a valve at the bottom opening downwards, and it works as a plunger in a pipe or barrel, and acts as a feed pump for supplying water to the boiler with which the requisite conections are formed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 10.—N° 825.

DOUGLAS, John George.—(*Provisional protection only.*)—" Improvements in valve motions for oscil- " lating cylinder engines."

The improved motion is designed for an oscillating cylinder, and its action is derived from the oscillating movement of the cylinder. The valve rod or a return rod fixed thereto and working parallel to the cylinder's axis has fixed on it a pin on which is a swivelling block arranged to slide in the groove or slot of a curved guide. This guide is set on a stationary stud or pin, and it can be set at various angles by means of a lever and catch plate. When the guide is inclined in one way the oscillation of the cylinder causes the valve to reciprocate suitably for making the engine turn in one direction, whilst on the guide being shifted so as to be inclined the other way it reverses the motion of the valve and of the engine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 10.—N° 826.

VERO, Joseph.—" Improvements in machinery or apparatus for the manufacture of hats."

The purpose of utility to which this invention has reference is the hardening of felt hat bodies.

Its essential features consist,—

Firstly. In imparting the requisite friction for the process to a hat body (previously steamed and supported upon a perforated segmental parabolical shell) by means of the horizontal reciprocatory motion of a hollow heated and padded block by which it is supported. The block reciprocates under a pair of perforated metallic lined and padded wings or flaps which clip the hat body and gradually condense its bulk.

Secondly. In the direct contact of the metal frictional surfaces with the body to be hardened; and,

Thirdly. In the formation of the internal lining of the wings whereby the " tip " of the body is properly hardened.

This arrangement may be reversed by imparting horizontal motion to the wings, keeping the block stationary; or again inverted wings heated by steam might be used, a correspondingly inverted and expanding block being used.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 10.—N° 827.

BOURDON, Arsène.—"Improvements in looms for weaving."

Only one heddle is used and half only of the threads of the warp pass through the heddle, the other half of the threads remain free, the usual second heddle being replaced by four bars parallel to the batten of the loom.

[Printed, 8d. Drawing.]

A.D. 1868, March 10.—N° 828.

NEWTON, Alfred Vincent.—(*A communication from William Smith Finney.*)—(*Provisional protection only.*)—"Improved apparatus for lubricating machinery."

A conical needle point screw applied to the orifice of the oil cup serves to regulate the escape of the oil from the cup.

[Printed, 4d. No Drawings.]

A.D. 1868, March 10.—N° 829.

WALLIS, John.—"An improved mode of and apparatus for dressing millstones."

A diamond or cutting tool is secured in a slide rest, which may be fitted over a pin in the eye of the stone. The tool is drawn round the central pin, and in so doing cuts in the face of the stone a convolute line.

[Printed, 8d. Drawing.]

A.D. 1868, March 10.—N° 830.

ATTWOOD, Charles.—"Improvements in the production or manufacture of steel and iron of a steely "character."

This invention consists in taking crude iron in the melted state and bringing it into a state of decarbonization, and in afterwards passing such decarbonized iron whilst at the highest degree of temperature into the highly heated hearth or chamber of an open reverberating furnace. In such open hearth furnaces the said decarbonized iron is to be mixed in proportion to its actual degree of decarbonization with different quantities of crude or non-malleable, or of malleable iron respectively, and preferably in a highly heated state as may be required in order to bring the whole into such a condition of hard or of soft steel, or of hard or soft steely or steel iron respectively as it may be desired to produce.

[Printed, 4d. No Drawings.]

A.D. 1868, March 10.—N° 831.

SMITH, Hubert Ellis.—(*Provisional protection only.*)—"Improvements in steam engines and "boilers."

According to my improvements in the self acting variable expansion gear and reversing motion of steam engines, I key a plate on the crank shaft provided with a stud engaging in a slot in the eccentric, which has also an opening through which the shaft passes and a projection engaging with the link on the shaft. The engine is reversed by traversing the eccentric across the shaft. To effect this a wedge is placed on each side of the shaft received in the opening in the eccentric, then by advancing one wedge and withdrawing the other the eccentric will be moved towards the advancing wedge. This is effected by a weighted oscillating lever connected to the wedges operated by a hand lever. The oscillating lever revolves with the shaft and acts as a governor, the centrifugal force tending to bring the eccentric midway on the shaft, so cutting off the steam earlier.

My improved steam boilers I make of vertical tubes placed in rows close together at each side down the centre and at one end. These tubes connect at bottom with a longitudinal pipe. The ends of the vertical tubes are reduced and provided with a flange recessed into the longitudinal pipe, the whole being united by bolts and flanges. Plates are applied on the flanges of vertical tubes to form flue bottom. Fire brick arches are also thrown across the rows of tubes to form the flues.

I further purify muddy water for use in boilers by passing it through tanks along its sides divided horizontally by perforated plates into compartments filled with cotton waste or other fibrous material by which the water is purified in passing downwards to the boiler.

[Printed, 4d. No Drawings.]

A.D. 1868, March 10.—N° 832.

COCKER, Richard.—(*A communication from Robert Hanham Collyer.*)—(*Provisional protection only.*)—"Improvements in the treatment of flax, hemp, jute, China grass, and other fibrous materials, and in "apparatus to be used therein."

The invention consists in submitting the fibres, first, to a breaking or softening machine; secondly, attaching their fibres to a special frame whereby they are moved. Thirdly, to the action of several chemical solutions so as to remove the gummy and resinous matters and opening out the fibre into minute filaments.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 11.—N° 833.

BROOKS, Samuel.—" Improvements in machinery for preparing, spinning, and doubling cotton and " other fibrous substances."

The first part of my invention consists in an improved front stop motion for drawing frames and other machines for preparing fibrous substances; the stop motion consists of a balanced instrument which is held against a regulating screw by the fibres passing to the calender rollers, and one end of this instrument rises while the other end drops; when some of the fibres are missing the lower end is then caught by a cam, and the driving power is disconnected as in other stop motions.

The second part consists in connecting the two cylinders of throstle spinning and doubling frames by friction wheels to equalise the twist.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 11.—N° 834.

BROADBENT, Edmund, and BROADBENT, John.—" Improvements in machinery and apparatus for " manufacturing paper bags."

Our invention is applicable to the manufacture of paper bags having square or flat ends, and it consists in guiding the paper on the tube machine by adjustable washers; also in a scraper for removing the excess of paste; also in drying the paste on a drying cylinder, and in an opener to clear the tube; also in an improved arrangement of folders and slides to fold and paste the end of the tube, and in a pair of shears or a knife to cut off the finished bag.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 11.—N° 835.

WINSER, Franklin, and SWINDELLS, Israel.—(*Provisional protection only.*)—" Improvements in " the utilization of the waste products arising from esparto grass and other fibrous materials used in the " manufacture of paper and other purposes."

The liquor is evaporated by means of steam or fire as it comes from the boiler or vats down to a thick pasty substance, which is run on to a hearth or other apparatus, by which means the remaining moisture is removed and the stuff reduced to a dry substance, after which it is placed in gas retorts where the gas which exists in large quantities is evolved, after which the cokes are drawn and put into a vat and either boiling water or water and steam added until the whole of the alkali is washed out, or it may be made into a caustic. The cokes may then be treated with a solution of phosphate of lime and China clay and the product again heated in a closed retort, by which the phosphate of lime and China clay become precipitated into the coke, and upon being withdrawn and allowed to cool will then be suitable for refining sugars and other articles of a like nature.

In obtaining the last portions of waste liquor from the fibrous matters it is preferred to have the fibres pressed by a hydraulic or other press. Oily matters similar to those obtained in the manufacture of ordinary coal gas are obtained during this process.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 11.—N° 836.

WINSER, Franklin, and SWINDELLS, Israel.—" Improvements in the manufacture of sulphate of " magnesia."

The novelty consists in,—

The employment of magnesia lime stone containing more or less carbonate of magnesia, commonly known by the name of dolomite, by which means sulphides or sulphites of magnesia are obtained. These sulphides or sulphites are reduced to sulphates in any well known manner.

The per-centage of carbonate of magnesia left in the waste is treated with bi-sulphuret of iron.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 11.—N° 837.

BROWNE, Benjamin.—(*A communication from William Buckwell.*)—(*Provisional protection only.*)—" Improvements in the construction of girders or rails, railway chairs, sleepers, switches, points, and crossings, " and in the mode of laying, fixing, and working the same on lines of railways and in other situations."

The novelty of this invention consists in constructing girders or rails of the shape in cross section of an inverted trough girder, something like the letter A, to dispense with the necessity for flanges for the purpose of obtaining greater strength with less weight of metal than heretofore and greater durability.

And as regards railway chairs the novelty consists in so forming the chair that the under side of the head of the rail rests upon the top of the chair; a key or cotter being passed through both to connect them together.

And as regards sleepers the novelty consists in forming them of corrugated rolled metal, the chairs being connected thereto by keys or cotters at the under side of the sleeper.

And as regards switches, points, and crossings, the novelty consists in constructing them on the above principle and in the mechanism for working the switches.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 11.—N° 838.

WALKER, THOMAS.—(*Provisional protection only.*)—"Improvements in the construction of electric "telegraph cables and lines, and in the mode of and apparatus for or connected with the transmission of "electric currents."

These improvements consist as follows:—In employing naked or uninsulated conductors for transmitting signals, the conductors being separated, when more than one is required for a cable, by covering them with a suitable porous material.

For land lines the naked conductors are simply laid in the earth at a sufficient distance apart to prevent confusion, or if the lines are suspended no insulators are required.

When required the conductors are covered with dirty or used cotton engine waste, which is also applicable as thread, string, or cord for other purposes.

Two or more earth plates of a different electrical nature are used at each end of a conductor brought into action by means of suitable apparatus.

Where required batteries to act as plus or minus to the conductors and earth plates are employed to send, receive, or reverse the currents.

In some cases portable batteries are employed, made as airtight as possible and provided with a valve opening outwards for the escape of the gases.

Another improvement consists in using a galvanometer coil and needle as a relay.

A transmitting key is formed by causing a lever or spring to pass over metallic surfaces connected with the line and battery or earth plates.

Resistance coils are made by twisting the fine conductors helically around any suitable body; if required a number of these helices may be combined.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 11.—N° 839.

NAYLOR, SAMUEL.—"Improvements in apparatus for raising water."

According to this Provisional Specification a wheel having curved blades projecting from its periphery is mounted on a horizontal axis in a narrow channel of masonry. Water is supplied at the bottom of this channel from the lower level, and when the wheel is driven it raises the water to the higher level.

A floating flap valve prevents the water returning when the wheel is at rest.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, March 11.—N° 840.

HAW, MATTHEW TURNER, and HEAD, THOMAS HOWARD.—"Improvements in rolling iron and steel, and in wrought girders and joists, and in machinery for producing the same."

In this Provisional Specification various arrangements are described for rolling girders, joists, and bars of pering form.

[Printed, 3*s.* Drawings.]

A.D. 1868, March 11.—N° 841.

ENNOX, PATRICK.—"An improved machine for beaming hides or skins, as well as for scouring and sleeking leather."

The operation of beaming skins as at present practised is well known, the skins after undergoing the ftening process being manipulated upon an inclined beam or bench by means of a tool held in the hands of workman, the operation being very laborious and requiring much time for its accomplishment.

The object of this invention is to produce a practical, simple, and effective machine for performing the ove operation; and consists in the employment of a sliding carriage properly suspended by suitable ways and carrying a beaming or slicking tool, the necessary reciprocating rectilinear movements being imparted to the carriage by the agency of a crank or an equivalent motor, the machine being further provided with a movable car for supporting the skins and introducing them to the action of the beaming tool.

In the operation of the above described machine the car is run forward beyond the sliding carriage and into a convenient position to receive upon its tablet the skin to be manipulated, which, after being softened by the usual process, is to be placed upon the tablet and secured thereto at about its middle by any suitable device, the machine being intended to manipulate one half of the skin at a time.

The car with the skin fixed upon it is to be run back into a position beneath the sleeking tool and there locked in position by a suitable mechanism forming part of the machine.

By the backward and forward movements of the sliding carriage the beaming tool will press upon the skin from its centre outwards, the tablet being revolved about under and during the action of the beaming tool in order to subject all parts of the skin to its action.

When the skin may have been thoroughly manipulated the car is run forward, the skin recessed so as to expose its opposite half to the action of the machine, after being subjected to which it is removed and a fresh skin substituted.

By the employment of the above described machine a great amount of time and manual labor is saved. The skins are reduced to a uniform and even thickness, and the whole work performed in a thorough and perfect manner.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 11.—N° 842.

HAWTHORN, William.—" Improvements in steam generators and other boilers."

This invention relates to a peculiar construction and arrangement of the furnaces and flues of internal flued boilers, and has for its object the securing a long and unbroken run of flame, thereby transmitting a greater amount of heat to the water or other liquid in the boiler than when such flame is broken up or divided, as in the ordinary multitubular boilers.

In an outer shell of any desired form are placed two circular furnaces, one at the right side of the shell and the other at the left; the inflamed gases pass along them into a chamber at the back and return towards the front in a circular flue between the two furnaces; they then pass downward into another circular flue, in which they again travel backwards until they reach another chamber, where they divide and return to the front through two flues placed one on the right another on the left of the last mentioned flue.

The heat may then pass up a dry uptake in front of the boiler to the chimney, or the first flue may be shortened at the front end, and a branch uptake may be brought from the fore end of the small flues through the roof or side of the shell, or may return back through the steam space and escape at the top end or side of the shell. Or the centre flue or flues may be converted into a furnace or furnaces if desired, the flame returning through the outside flues (which in the first arrangement formed the furnaces), then passing downwards and back through either the large or small flues and again returning towards the front.

The shell and flues may if required be fitted with water circulating tubes, either straight, tripoid, or of a cruciform shape, or with any tubes specially adapted to improve circulation and increase the effective heating surface.

Air pipes arranged so as to open through the shell and furnace bottoms and under the fire bars may be used in order to get a direct supply of hot or cold air under the bars, and to place such pipes in any other part of the furnaces or flues where they may be required.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 12.—N° 843.

PAGET, Frederick Arthur.—" Improvements in constructing ships' compasses and their binnacles, and " in preventing the deviations of compasses in iron or steel ships."

These improvements relate, firstly, to a novel mode of arranging the magnetic needles in all kinds of compasses. They are placed in vertical planes one below the other instead of side-ways. All the details of the card and also the card itself may be of aluminium or ebonite. The needles are very short and of the rhomboid shape; they are preferably made of cast steel and boiled in linseed oil after hardening; after which they are magnetised, preferably by means of an arrangement of three electro-magnets.

The compass bowl is of pewter, and its central weight hangs from its bottom by means of a universal joint.

A steering compass is formed by setting a number of magnets, one below the other, at the top end of a hollow tube of aluminium, forming a vertical axis, while the card is brought down to the eye of the steersman by being fitted at the bottom of the hollow spindle.

The fittings of mast-head compasses are made of an alloy of zinc, copper, and wrought iron; or of from 20 to 30 per cent. of manganese alloyed with cast iron; or of iron with antimony.

The same compositions are used for compass binnacles, which are made with a hinge at about the level of the deck, so as to be lowered when required.

These improvements further consist in destroying that magnetism which is produced in the hull of or other parts of or on the ship during its construction. An insulated wire is temporarily made to encircle the hull or other parts of the ship, "preferably around and at right angles to the longitudinal axis or axes of the hull "or other parts it is wished to demagnetise." "An electric current, either continuous or interrupted, is then "conducted through this spiral. The current is either produced in any one of the ordinary galvanic batteries "or by means of a magneto-electric induction apparatus," and while it is on the part it encircles is subjected to vibration. The current is either employed directly, or it may serve to induce a current by means of an induction apparatus; and it can be regulated by means of any rheostatic apparatus or commutator, respectively. When demagnetising any portion of the ship by means of the striking of an electro-magnet the electricity is obtained from a magneto-electric engine.

[Printed, 6d. No Drawings.]

A.D. 1868, March 12.—N° 844.

BOURNE, John.—"Improvements in auxiliary propulsion."

In this contrivance the propulsion is effected by an oar hung vertically on each side of the ship and moved to and fro with a sculling motion. These oars may easily be turned up upon the sides of the vessel when not required. They are to be suitably feathered by proper mechanism, and are to be driven by an engine on the deck so as to avoid the penetration of the holes.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, March 12.—N° 845.

RYLAND, Frederick.—"Improvements in the manufacture of pulleys for suspending window frames and "for other like purposes."

This invention consists in turning shoulders on the axle of the bowl or wheel of the pulley in the same planes as the sides of the wheel, and making on the inner surfaces of the side plates of the box or frame of the pulley bushes or annular projections against which the shoulders of the axle bear. The bowl or wheel of the pulley is thereby preserved centrally in the frame or box. By this invention the pulleys are made more readily and also more exact and uniform than by the ordinary method of manufacture.

[Printed, 8d. Drawing.]

A.D. 1868, March 12.—N° 846.

THOMPSON, William.—"Improvements in the manufacture of iron castings."

This invention consists in strengthening cast iron castings by first inserting into the moulds bars, rings, or other forms of wrought iron or other metals and then pouring in the cast iron so as either completely or partially to imbed the wrought iron or other metal in the casting. The bars, rings, or other forms of wrought iron or other metal have previously a thin coating of cast iron cast upon them in order to effect a perfect union between them and the casting.

[Printed, 4d. No Drawings.]

A.D. 1868, March 12.—N° 847.

FLETCHER, Henry.—"An improved method of obtaining and applying motive power."

The novelty consists in,—

Utilizing the oscillation of ships caused by the action of the waves, and for this purpose a pendulum of considerable weight is suspended in or on the ship, and as the ship oscillates the pendulum will be either perpendicular or nearly so, or will generally oscillate in different times and ways, so that a stud or other contrivance can be affixed near the pivot of the pendulum rod, and such stud can be used to connect a rod to work a pump or rotate a rack wheel or other motive power to be applied in a variety of ways in the ship.

[Printed, 8d. Drawing.]

A.D. 1868, March 12.—N° 848.

LYTTLE, William Alexander.—(*Provisional protection only.*)—"Improvements in the means and "apparatus for supplying boilers with water."

Instead of forcing water into a boiler as at present against the pressure of the steam inside, this invention proposes the employment of an intermediate steam tight cistern fitted with tubes, which are alternately opened and shut by a suitable valve opening at one time communication between the boiler and the cistern, and next between the latter and the reservoir from which the water is supplied.

The proposed cistern thus plays almost exactly the part of the lock in a canal, and the feed water that of the ascending barge which enters the lock when its gates are open at one end and shut at the other, and which leaves the lock for the higher level when the position of the gates is reversed.

By a simple arrangement of the tubes leading into the boiler the water flows down from the cistern (which is placed above the normal level of the water in the boiler) by its own hydrostatic pressure till the water level reaches its proper height, when the cistern ceases to flow, on the same principle as a barrel does when its vent hole is shut.

The above named valve of communication between this cistern and the boiler and reservoir is worked by any convenient power.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 12.—N° 849.

BUSH, William Edwin, and BUSH, Frederic Augustus.—(*Provisional protection only.*)—" A new or " improved trap for catching mice, rats, animals, game, or vermin."

This invention consists of a box or cage furnished with radial arms (placed at the mouth or opening of the same) and actuated by a spring or balance-weight movement in connection with a platform on which the bait is laid, whereby the mice, vermin, or otherwise, are urged forcibly forward into the body of the said trap by the revolution of the arms aforesaid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 12.—N° 850.

BARNES, Thomas.—" An improved method of and machinery for preparing rovings from waste and other " inferior fibrous materials."

This invention relates to the preparing of rovings from waste and low class fibrous materials, and consists in employing the ordinary carding engine (for reducing material to " endway cardings ") and roving frame (the draft of the latter being decreased), and a shaft having a number of drums thereon, the periphery of which being in contact with the material on bobbins imparts rotary motion thereto; the draw rollers and flyers work said material into a roving ready for the mule or other spinning machinery without the aid of the ordinary " Bilby."

[Printed, 8*d*. Drawing.]

A.D. 1868, March 12.—N° 851.

STEPHENS, Anson Parsons.—" Improvements in vices and similar clamping mechanism."

This vice consists of a stationary jaw, a moving jaw upon a T shaped bar sliding through the stationary jaw supported by a projecting flange beneath it. On the side of the T bar is a steel toothed rack that is acted upon by a rack bar that is moved by a toggle and cam lever. The rack bar is held up and drawn forward by a spring, and is relieved from the rack of the T shaped bar, when the cam lever is turned one way, so that the moving jaw can be slid by hand, and when the cam lever is turned the other way the toggle acts powerfully on the jaw of the vice.

Rotary cutting tools are provided for finishing the parts of the toggle and their bearings.

The cam lever swings on a taper pin through jaws.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 12.—N° 852.

HODGESON, John.—" Improvements in railway and other signals, and in mechanism for actuating the " same."

1. The improvements apply to lamp signals with colored shades, and consist in the use of a quadrant or segment with three lenses of different colors which will show the signal-man (the light being obstructed at other times) when the proper signal is correctly exhibited.

2. The improvements relate to mechanism for actuating signal wires, cords, chains, or rods, and are designed to allow for the free expansion and contraction of such wires, and consists in applying nipping or gripping mechanism so that the signal wire, cord, chain, or rod only becomes connected with or attached to the actuating handle when its movement begins, as the act of moving the handle causes the mechanism to grip the wire, cord, chain, or rod, or a part connected with it, such wire, cord, chain, or rod being free when the handle is returned to the " danger " position.

[Printed, 1*s*. Drawing.]

A.D. 1868, March 12.—N° 853.

N, William Edward.—(*A communication from John Benjamin Stoner, Leopold Mendelson, and Crommelin.*)—" Improvements in ballasting vessels."

vention consists in ballasting vessels by lowering weights into the water so as to prevent the vessel ing or being capsized.

d, 8*d*. Drawing.]

A.D. 1868, March 12.—N° 854.

Alfred, and GEARY, Edwin.—" Improvements in cinder sifters."

rovisional Specification describes a sifting vessel of a cylindrical form with openwork at its lower s vessel fits into a pail as far as a flange formed on the top of it will allow. The sifter has a cover it and locking on; it has a handle at its top by means of which the sifter is turned to and fro in the

ed, 6*d*. Drawing.]

A.D. 1868, March 12.—N° 855.

EN, Bashley.—(*Provisional protection only.*)—" Improvements in the manufacture of manure."

eduction of coal and certain other carboniferous minerals to an extremely fine powder by grinding or ans in order that the material may be used either by itself or with other manures as a fertilizer of

d, 4*d*. No Drawings.]

A.D. 1868, March 13.—N° 856.

N, Edward Kenworthy, HOLMES, John, and HOLMES, Henry.—" Improvements in machines."

vention relates to lock stitch and Grover and Baker stitch sewing machines. In the lock stitch the needle bar is actuated by a rocking shaft situated above the bar, a crank on the said shaft being d to the needle bar, the joint at end of crank rocking past the verticle centre line, thereby giving the movements to the needle. The rocking shaft is actuated by a revolving shaft. The shuttle is a rocking lever which is connected to a crank on the end of the revolving shaft. To allow the to be reversed, the crank driving the shuttle is loose on the shaft, so that the said shaft revolves in rection through a portion of a circle without moving the shuttle. The feed motion consists of a ver, one end of which is fitted on an excentric. The lever rocks on a pin in the slot as the excentric nd the pin is shifted in the slot to vary the length of stitch. In another arrangement a crank pin a slotted lever, the said lever giving a to and fro motion to the feeding plate, the said feeding plate sed at the proper time by a cam. For heavy work, the presser foot is hinged to a lever so that the erhangs a vertical line, the foot being lifted by a tappit acting on the said lever. A positive motion yed to let off sufficient thread to form each stitch. The time of tightening of the stitch is made e. Shuttles carried in cradles are supported on springs.

ing machines to make the chain or the Grover and Baker stitch, the corner is hinged to a rocking lower end of the looper working in an inclined slot. The rocking shaft is driven from an upper shaft by a connecting rod, the lower end of which is jointed to a radius link carrying a pin which a slotted lever on the end of the rocking shaft. The revolving shaft is preferably driven by a band riction wheel the friction pinion being made adjustable for wear.

d, 1*s*. 6*d*. Drawings.]

A.D. 1868, March 13.—N° 857.

John Hornby.—" Improvements in moderator lamps."

rovisional Specification describes a moderator lamp with one or more additional burners applied to means of branch pipes in connection with a supply pipe or pipes from the oil reservoir so that the of the spring upon the piston supplies oil to the additional burner or burners.

he oil overflowing from one burner may flow on to the other burner.

d, 8*d*. Drawing.]

A.D. 1868, March 13.—N° 858.

, Stephen, and REDGATE, William.—" Improvements in the manufacture of lace in twist achines."

ding to this Provisional Specification a purl like that of real lace is produced, the upper and lower limbs of the purl loop being caused to cross each other. The upper limb of the purl is snared by the crossing of a draw warp and draw bobbin so formed as to tend to depress it, and the lower limb of the purl is similarly snared by the crossing of other draw warp and other bobbin so formed as to tend to elevate it.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 13.—N° 859.

TAYLOR, Adam.—(*Provisional protection only.*)—" Improvements in brakes or apparatus to controul the " rotation of an axis."

According to this Provisional Specification there is mounted upon any axle an eccentric having its rod connected with a piston in a cylinder containing water. There is a passage connecting one end of this cylinder with the other, and when the apparatus is at work the water is propelled through this passage. By opening or partly closing a valve in this passage more or less resistance is offered to the piston and to the revolution of the axle.

When it is desired to give uniform resistance to the rotation of an axle the passage in the cylinder is dispensed with and the piston is then perforated.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 13.—N° 860.

LYNDON, George Frederick.—" Improvements in rotating shafts and axles and their bearings, and " in the means of lubricating the same."

According to this invention the shaft or axle has a metal collar or short hollow cylinder fixed upon it, recesses of a suitable form and size being made in the bearings or brasses to receive it. The whole of the friction and wear takes places between the said collar and the bearings. When the collar is worn it may be removed and replaced by a new one. The lubricating of the shaft and bearings is effected by making a ring or flange on the collar described and making depressions in the bearings for it to work in. The oil which collects in the depression in the lower bearing and in the hollow carriage or plummer block is carried again to the upper bearing by the rotation of the flange, and thereby distributed over the whole working surfaces of the shaft and bearings.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 13.—N° 861.

ROWAND, Michael.—" Improvements in the treatment or preparation of the ingredients employed in " the manufacture of fermented liquors."

This invention consists in mixing or incorporating the malt and hops or extracts thereof, or an extract of hops alone with sacharine fluid prepared from the sugar obtained from sago, flour, or from other farinaceous substances, and which is commonly known as glucose or grape sugar, or with the substance known as Garton's patent " sacharum " or brewers' sugar, described in the Specification of Letters Patent granted to Charles Garton, bearing date February 18th, 1859, No. 451. The grape sugar is reduced to syrup by melting, and then (when malt is intended to be employed) adding thereto the malt either in a bruised or pulverised state, the mixture being raised to a high temperature and the hops or extract of hops added. When malt is not used it is unnecessary to raise the temperature of the syrup to so high a degree as above mentioned. The whole of the ingredients are then thoroughly stirred and well mixed together, after which the mass, which will by this time have assumed a pasty consistency, may, when sufficiently cool, be compressed and packed into tins or other receptacles for the market.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 13.—N° 862.

McNAUGHT, William.—(*Provisional protection only.*)—" Improvements in steam engines, steam " boiler and other furnaces, and in apparatus for heating feed water."

1. Consists in making fire bars arranged across the furnace with deep serrations in their upper edges and resting on pivots at their ends, and all connected so as to be oscillated by hand or power.

2. Consists in fire bars arranged lengthways of the furnace, so that all will move forwards together and then each alternate bar will be drawn back, and afterwards the remainder of the bars will be drawn back by mechanism actuated by hand or power; thus the fuel fed in front by a " hopper " with a moveable bottom is gradually carried forward towards the bridge.

3. Consists in a hollow fire bridge of iron or fire clay, made in one or more parts, the gases passing under or through the bridge which is perforated to allow air to pass downwards from the bridge.

4. Consists in driving the scrapers of water heating apparatus by a mangle toothed wheel and making scrapers of flat plates.

nsists in applying an oscillating compensating wheel or arms with weights worked by the piston e engine, so that the excess of pressure at the beginning of the stroke will be absorbed by the the mass of the wheel and given back during the latter half of the stroke, thus equalizing the orce nearly.

nsists in a long valve made hollow, from which the exhaust steam escapes through a long slot into onding slot in the valve facing of the cylinder, and in adjusting superimposed sliders on the back lve to cut off the steam to the cylinder, by right and left handed screws at the exterior of the valve uated by the governor.

nsists in making packing rings for pistons and air pump buckets flexible by forming them of a urve on the interior flange instead of has hitherto done, and in bringing pistons to their true osition when worn by wedges or screws.

nsists in lubricating by forcing the tallow or other matter from its receptacle to the parts to be d by pumping water by hand or power into the lower part of the receptacle and forcing the tallow e upper part.

ted, 4*d*. No Drawings.]

A.D. 1868, March 13.—N° 863.

ER, Carl Severin.—(*A communication from Johann Linnemann.*)—"An improved portable side on, *adapted* for the use of the army more particularly."

ovelty of this invention consists in so constructing a side weapon that it may be used as a weapon or defence, also as a spade for entrenching purposes, and as an axe and saw, and if necessary in a frying pan.

ed, 10*d*. Drawing.]

A.D. 1868, March 13.—N° 864.

AW, Henry.—"Improvements in means or apparatus employed in spinning worsted and other "

ject of the improvements is to prevent what is commonly called "double," when threads break in sage to the flyer. For this purpose there is applied under the top rail and between each pair of a guard extending downwards by preference a much shorter distance than those ordinarily used, say elow the top of the spindle, and inclined to a considerable angle from the front thereof towards the oint, and then horizontally or nearly so to the back point, where it may be level with the back of the le of the top board to ensure the broken thread running to the lowest part of such guard and g broken.

ed, 6*d*. Drawing.]

A.D. 1868, March 13.—N° 865.

BENT, Charles Ralph. — "Improvements in the manufacture of hats, bonnets, and other r articles."

id invention consists in making hats, bonnets, and other coverings for the head of raw or untanned kin, and in moulding and colouring or otherwise treating the said hats or other articles to give appearance of straw, felt, or other material of which such articles are usually constructed. The split in the usual manner. The outer or hair side of the skin is manufactured into imitation straw other similar articles, while the inner side of the skin is used for hats and other articles intended to felt. I employ shaping blocks similar to those ordinarily used in such manufactures. The imitation or other material is produced by means of dies, the skin being coloured or dyed as desired. The felt hats are tanned after being finished on the shaping block, and are also dyed or coloured. The nnets, or other articles may be stiffened with buckram or shellac.

ed, 4*d*. No Drawings.]

A.D. 1868, March 13.—N° 866.

I, Salom Henry, and FIELD, Thomas.—"An improved apparatus or instrument for clipping or ing the hair of horses and other animals."

se a metallic segmental comb, the teeth radiating to the centre; upon the centre of the comb plate nt an arm which radiates freely, and on this arm we fix a knife, so that the knife and arm traverse te over the surface of the comb and its teeth. The comb being applied to the skins of animals, the ise and divide the hair, which entering between them is cut by the knife as it is made to traverse rds and forwards.

nted, 8*d*. Drawing.]

A.D. 1868, March 13.—N° 867.

BETTELEY, Joseph.—(*Provisional protection refused.*)—" Improvements in the manufacture of sheet metal, " metal bolts, and ships' sheathing."

This invention consists of making sheets of soft metal stiffer or more rigid by means of introducing a small portion of hard metal (such as zinc) in the centre of a sheet of soft metal or metal composed of lead or lead and its alloys; and which I perform by having a casting box that will admit the hard metal being placed in the centre. I then take the soft metal in a molten state and pour into the mould or casting box so as to completely cover the hard metal, and after taking it from the mould I pass it through rollers reducing its thickness, and so form sheets of metal. I also make metal bolts. I first obtain a piece of zinc in such length as I may require, and I place the same in a mould and cast on or over it composite metal composed of tin or tin and its alloys.

Ships' sheathing.—I form suitable sheets of the aforesaid metal, and I also make such sheets of harder metal on one side than the other, which sheets I fasten to the ship by means of nails made from copper or tin or from copper or tin and their alloys, or nails coated with tin and its alloys, and I place the soft side of these sheets next the ship.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 14.—N° 868.

BEATTIE, William George.—" Improvements in steam pistons."

The features of novelty which constitute my invention are the modes of packing them by rings, as stated in my Provisional Specification.

[Printed, 1*s*. Drawings.]

A.D. 1868, March 14.—N° 869.

HOLNESS, Stephen.—(*Provisional protection only.*)—" Improvements in or additions to speaking tubes " for intercommunication in railway trains, buildings, and other places where such tubes are or may be " used."

The chief feature of novelty in my invention is the peculiar arrangement for establishing for the time oral intercommunication between one particular compartment or place and that with which it is desired to communicate, such arrangement being the box or chamber piece into which the ends of main tube are entered with the toothed rotating holed plug (alternately shutting and opening the passage) as it is operated by the second toothed rotating holed plug on the branch tube within the compartment, room, or other place from which it is desired to signal, such branch tube being held in position by a spring, and secured if necessary by a seal so as to prevent its being unduly tampered with.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 14.—N° 870.

JACOBSOHN, Noah.—(*Provisional protection only.*)—" A new self-acting letter box for receipt and " payment, provided with a controlling and signalizing apparatus."

The letter box is intended to fulfil the following purposes :—

To receive the letters, paid or unpaid, newspapers, despatches, circulars, and other articles, also to signalize immediately the receipt, and to secure these objects until taken out by the authorized receiver.

To pay out the necessary postage stamps or marks for letters, to register the payment exactly and instantly, and to render so secure and permanent a control that embezzlement cannot take place, as the means of paying are only designed for an exchange between the post and corresponding public.

To receive despatches, to signalize their receipt, to give a receipt for them, and at once to mark the very time, within a term of 10 minutes, both to the receiver and the telegraph office, affording at the same time a visible control to all passers by.

To deliver receipts for all documents and statements forwarded by the courts of law under the supposition that an agreement has been attained between the courts, the post, and corresponding public.

To save the time, and therefore the money, of the post office and the courts, and also to save time and give comfort to the receiver.

Each letter box is to be marked with a number, given officially, which number must be alike on every receipt and payment delivered by the box.

The main interior mechanism of this new selfacting letter box is doubly arranged symmetrically at each side of the vertical centre line, and consists in a delivery of metal marks and in a delivery of paper stamps on each side.

The lower portion of the apparatus contains a slit covered with a plate, where letters, newspapers, despatches, and other articles are to be put in.

The upper portion has a dial, the finger of which is to be regulated by the despatch carrier or postman.

A bell fixed behind the box rings, first, when the slit is opened, which takes place by a slight pressure of the finger; secondly, when a metal mark is discharged; and, thirdly, when the lid hinged before the paper stamps, and usually closed, is removed in order to take them out.

The two sorts of stamps can only be taken out by a small square key borne by the postman or carrier, and the finger on the dial can only be regulated by this key.

[Printed, 1*s*. Drawings.]

A.D. 1868, March 14.—N° 871.

BELLHOUSE, WILLIAM, junior, and **ASHWORTH**, RICHARD.—" Certain improvements in carding " engines."

The novelty and feature of the invention consists in imparting to the stripper and its supporting arms an intermittent motion so as to cause the traverse to vary in speed or otherwise to compensate for the accelerated motion of the stripper during one part of its traverse.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 14.—N° 872.

HANDYSIDE, JAMES BAIRD.—" Improvements in arrangements and apparatus for applying springs to " railway rolling stock and otherwise."

This invention relates to arrangements and apparatus designed more particularly to obtain improved applications of helical steel springs packed with wool for railway rolling stock, At the same time the said arrangements and apparatus or some of them are also applicable with other kinds of springs and for other purposes.

In one arrangement designed for application to the draw bars of a railway carriage there are two sets of the springs, each set consisting of two or more, which are placed parallel to and on opposite sides of the bar. The springs are held between cupped discs or heads fitted upon a tube on the bar, on which tube one of the heads can slide when compressing the springs, the other head bearing against a collar formed or fixed on the tube. The draw bars of the opposite ends of the carriage are entered into the opposite ends of the same tube which carries both sets of springs. The collars are on the ends of the tubes, and the outer heads of the two sets of springs bear against them in opposite directions.

The sliding heads are acted upon by keys fixed in the draw bars, and extending out through slots in the tubes, such slots being elongated to allow of the movement of the keys when compressing the springs.

Various other arrangements are described in the Specification, and an important feature which is applicable in a great variety of cases is the interposing of a lever or levers between the spring and the point or points of application.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, March 14.—N° 873.

KNIGHT, JOHN PEAKE.—" A new or improved indicator lamp and semaphore for cabs and other public " carriages and for floating vessels, also for regulating the traffic in the public thoroughfares and rifle " practice."

The novelty of this invention consists in the application of coloured lights, discs, and semaphores to indicate whether public carriages are for hire or engaged, also for regulating street traffic, rifle practice, and shewing the courses of ships at sea.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 14.—N° 874.

PETRIE, JOHN, junior.—" Improvements in machinery for washing wool and other fibrous materials."

This invention relates, firstly, to the employment of two rakes, the one accompanying the other for the purpose of raising the material from the washing trough. Also for the like purpose in the use of a travelling surface provided with prongs which are thrust forward and then withdrawn. Another part of the invention consists in the employment of a roller furnished with vans for transferring the material from the lifting cylinder. In the troughs of washing machines the dirt trap is transferred from one end to the lowest part thereof, and is provided with a valve, another valve being adapted to draw off the washing solution. Water pipes are also employed to cleanse the bottom of the said trough.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, March 14.—N° 875.

MULLINER, Francis.—" Improved apparatus to be used in connection with the poles and splinter bars " of carriages."

This invention consists in certain arrangements by means of which the poles of carriages are readily fixed and removed, whilst they possess when fixed the capability of traversing vertically. The splinter bar may be made in one or more part or parts, and by preference is fixed rigidly to the carriage, the pole being connected therewith either by means of sockets jointed to the splinter bar, or in some other equivalent or analogous manner. The pole may also be made in more than one piece with a joint or joints, so that it can be fixed or removed at pleasure.

The novelty of this invention consists in the construction and arrangement of parts and mechanism employed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 14.—N° 876.

CLAY, John. — " Improvements in harness saddles and harness pads."

According to this invention the saddle or pad tree is made of iron or other hard metal or alloy by casting, pressing, forging, or stamping. When the saddle or pad is provided with a cantle the said cantle is made of metal and separately from the saddle or pad tree, and is fixed to the said tree by a bolt and hook or stop knob. The upper side of the saddle or pad tree is covered with leather, and the detached cantle may either be covered with leather or other material or enamelled. The flaps and panels or paddings are of the ordinary kind.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 14.—N° 877.

CARTER, John.—" Improvements in machinery for the manufacture of nails and spikes."

This invention consists of machinery for pointing rods, cutting of pointed rods, and heading the cut off rods for the manufacture of nails and spikes. The pointing machinery consists of a roll having a rotary motion, between the periphery of which and an inclined travelling tool the end of the heated rod is compressed and thereby tapered.

The lateral spreading of the rod is prevented by the periphery of the roll and the inclined tool working in a slot in a travelling bed. The inclined tool and travelling bed have a reciprocating rectilinear motion. The pointed rod is passed through an opening in a fixed cutter and cut off by the descent of a moveable cutter.

The cut off rod falls on a moveable bottom and between a fixed and moveable gripping tool. The cut off rod being held between the gripping tools the moveable bottom retires, and a heading punch advancing through the hole in the fixed cutter forms a head on the said rod.

The pointing machinery described may be used for separately for pointing heated rods.

[Printed, 1*s*. Drawing.]

A.D. 1868, March 14.—N° 878.

LYTTLE, William Alexander.—(*Provisional protection only*.)—" Improvements in the means and " apparatus for closing and securing boxes, bags, and other packages."

By means of this invention the necks of bags are tightly closed and sealed, whilst dispensing wholly with the use of string as well as with the destructive process of impressing burning wax upon the neck of the bag.

A peculiar seal-buckle carries at one end a strap, and when the strap is drawn tightly round the neck of the bag it is passed over the tongue of the buckle, the strap being fitted with eyelet holes for the purpose. A lid is then slid or rotated like the blade of a scissors across the point of this tongue, the axis on which it revolves being a rivet fixed between the tongue end of the buckle and a cup or pan at the opposite end of the same stem in which a seal or label can be impressed.

The instrument is very like a " Bang's," the tongue being at the key end, the rivet midway down the finger-board, and the seal-pan forming the body of instrument.

Across the seal pan a knife blade, attached to one end of the lid, is shut when the latter is closed over the tongue. The tongue is rigid and placed perpendicularly to the plane of the lid's rotation. The knife blad lies, when shut, in a slot across the seal-pan, and its upper edge does not then project above the surface of the latter. A seal is now impressed, and it is obvious that the strap cannot be removed from the tongue without raising the knife-blade and so rupturing the seal.

In the case of boxes a similar seal-pan, tongue, and lid are used, but the strap may be replaced by a

plate which is attached to the box lid, whilst the seal-buckle is secured to the body of the box and
ıe takes the part of staple to the hasp. This arrangement may also be combined with a lock, the
hich shoots through a hole in the knife which intersects the seal-pan.
d, *4d*. No Drawings.]

A.D. 1868, March 14.—N° 879.

LT, Pierre François.—"Improvements in machinery for finishing boots and shoes."
rovisional Specification describes apparatus with revolving cutters for shaping the heels and soles
nd shoes.
paratus with burnishing tools to which a longitudinal reciprocating motion is given to finish the
soles.
tating brushes and finishing tools.
d, 1*s*. *4d*. Drawings.]

A.D. 1868, March 16.—N° 880.

AN, John.—"Improvements in apparatus for dressing millstones."
mproved apparatus comprises a horizontal guide rest which is truly planed on its under side to lie
e stone, and has fitted to it a slide carrying a short horizontal arm, which has on it a boss with
carrying one or more revolving diamond-carrying spindles. The boss is moved on the arm
each stroke by a feed screw, and the stroke is performed by hand by means of a handle on the
by moving the slide along the main guide, or it may be made to reciprocate by power in any con-
ay. For guiding the driving cord from a pulley on a central vertical spindle two pulleys are carried
justable arm on a rocking shaft held in a bracket fixed to the main guide, and a spring is applied
on the rocking shaft to keep the cord in a state of tension. In another arrangement for leading
ng cord to the tool spindles the central vertical spindle is dispensed with, and the cord from a
l shaft overhead is carried round a guide pulley near the middle of the guide rest, thence horizon-
and round a guide pulley at the outer end of the rest, whence it returns horizontally towards a
lley at the middle which leads it up to the overhead shaft again. In its horizontal course the cord
l round a guide pulley on the slide, and then round the tool spindle or spindles, returning round
e pulley into its horizontal course again. The invention also comprises improvements in minor

d, 8*d*. Drawing.]

A.D. 1868, March 16.—N° 881.

RVILLE, Emile Viarengo.—(*Provisional protection only*.)—"An improved machine for crushing
fting flour."
nvention consists of a combined sifting and crushing machine, the object of which is to reduce the
nular, or clotted particles of the flour or meal to a perfectly pulverized and sifted condition.
pparatus is composed of an oblong or other shaped frame, having at its summit a hopper for
the flour to be treated or operated upon. Immediately beneath this is placed a wire gauze sieve
tor, into which the meal or flour falls; this sieve, by means of a backward and forward motion
to it by any ordinary means, allows the fine flour and the small clotted particles to pass through
ing led by two ducts or conduits on either side of the machine deposit the flour in two sieves in
n with the said ducts, and from thence into two hoppers placed beneath these sieves. The larger
g emptied into a trough beneath the first named sieve are thence delivered to two crushing rollers
with teeth and arranged below the trough; the pulverized meal or flour is received by another
laced under the rollers, from whence it descends by an inclined plane furnished with gauze, which
s what little quantity of fine flour still remains with the small clots; the latter are then crushed
time between two cylindrical friction rollers.
d, *4d*. No Drawings.]

A.D. 1868, March 16.—N° 882.

NN, Alexander.—"Improvements in the construction of rotary engines."
motion is obtained by the operation of the weight of one or more piston or pistons upon the
surface or surfaces of a cylinder or cylinders in which such piston or pistons is or are free to move,
rangement may be reversed and the rotary motion derived from the action of one or more cylinder
ers upon a piston or pistons. The actuating power is obtained by the admission of steam into the
or cylinders by means of a slide valve or valves, the driving power of the pistons or cylinders being
by constructing them of sufficient dimensions and weight to acquire the desired momentum, or

by attaching weights thereto. The valves valves receive their motion by springs or equilibrium weights actuated by the projection of the moving weight in any direction, the momentum of the moving weight around the centre of rotation and the centrifugal force or by one or more of such forces.

The novelty of this invention consists in the combination of mechanism employed.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 16.—N° 883.

BEECH, Thomas Spring Lake.—(*Provisional protection only.*)—" Impovements in engines for obtaining " rotary motion by means of steam, water, gas, or other fluids."

Constructing rotary engines wheel or disc shape, and giving motion thereto by allowing steam or fluids to impinge thereon.

Using a combination of wheels or discs as above.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 16.—N° 884.

GRIFFITHS, Henry Francis, and BEARD, Ambrose, the younger.—(*Provisional protection only.*)— " Improvements in apparatus for puddling iron and steel."

This invention consists of a chamber or vessel supported on a shaft in which the iron or steel to be puddled is put, the said chamber or vessel having an oscillating motion given to it either in a vertical or horizontal plane. Motion is given to the chamber or vessel by a connecting rod worked by a crank on a rotating shaft. Streams or jets of air are introduced into the chamber or vessel through the hollow shaft on which it turns. By the oscillating motion of the chamber the molten iron or steel is thrown or dashed about and thereby puddled. The chamber or vessel is divided into a series of compartments equal to the number of balls or blooms to be made at one heat. The iron or steel is thus preserved in separate portions, each sufficient for one ball or bloom. By this invention manual labour in puddling is rendered wholly or in great part unnecessary.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 16.—N° 885.

ARTHUR, Walter, and ARTHUR, William.—" The support and cure of hernia by means of a new " and improved form of truss."

Consists of,—

A plate covering the hernia together with a cross bar for the attachment of the strap.

Sliding or telescopic levers in certain cases, instead of the arms of the cross bar.

A curved rotating lever, to make the lower end of the plate more secure in certain cases, together also with its attachment to the pelvis strap at the opposite hip. The use either of two cross bars or sliding levers in case of umbilical hernia.

The application of straps beveled on the rough side, and with the cuticular side to the wearer's skin.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, March 16.—N° 886.

BONNEVILLE, Henri Adrien.—(*A communication from Pierre Legrand.*)—" Improvements in jacquard " looms."

These improvements relate to the manufacture of figured stuffs at a speed equal if not superior to that at which, up to the present day, plain stuffs have been manufactured.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 16.—N° 887.

BONNEVILLE, Henri Adrien.—(*A communication from Achille Philippe Cyprien Legrand.*)—" Improvements in the permanent way of railroads."

These improvements relate to new and improved means of fixing and connecting rails on metallic traverse pieces.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 16.—N° 888.

BONNEVILLE, Henri Adrien.—(*A communication from Jean Baptiste Lainé and Louis Ernest Leconte.*) —(*Provisional protection only.*)—" New and improved apparatus for manufacturing cartridges."

The object of this apparatus is to unite or join together the bottoms of metallic cartridges with the sockets.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 16.—N° 889.

ELLIOTT, Frederick Henry, and **ELLIOTT**, Charles Alfred.—(*A communication from Pierre Gabriel Bardou and Denis Albert Bardou.*)—" Improvements in telescopes."

Means of ascertaining and indicating distances. A movable wire is moved to or from a fixed wire by means of a ring cycloidal internally and other parts. The ring has one or more scales or indexes, and when the wires just take in the object, say a man, the distance can be ascertained by referring to the index calculated for the height of a man. A fixed piece serves as the pointer of the index.

[Printed, 8d. Drawing.]

A.D. 1868, March 16.—N° 890.

GREIG, David.—" Improvements in traction engines and other engines to travel on common roads."

This Provisional Specification describes such an arrangement that the play of the springs carrying the body of the engine does not interfere with the working of the spur wheels or driving gear which actuate the driving wheels.

[Printed, 10d. Drawing.]

A.D. 1868. March 16.—N° 891.

NEWTON, William Edward.—(*A communication from Levi Stevens.*)—" Improvements in the manufacture of illuminating gas in the distillation of hydrocarbons and the making of gaseous fuel for heating " purposes."

Mixing the vapors of a hydrocarbon and steam in a common chamber and afterwards superheating the same and mixing therewith air.

[Printed, 8d. Drawing.]

A.D. 1868, March 16.—N° 892.

NEWTON, William Edward.—(*A communication from Elisha Whittelsey Andrews and Edward Augustine Calahan.*)—" Improvements in telegraphic apparatus."

This invention is to indicate and register the fluctuations in gold and stocks and the prices of articles of merchandise.

Telegraphic instruments are placed at different centers of business and connected with each other and with a central transmitting station by two or more wires. Each receiving instrument has a type or character wheel moved by a pawl to the armature of a magnet acting on a ratchet wheel, and a second pawl to a ratchet wheel with the teeth standing the other way is used to block the type wheel and prevent it moving more than one character at a time. Two type wheels, side by side, are generally used, one with characters the other with numbers, and they are controlled by a separate magnet and electric circuit.

The impression on the paper is given by motion from a separate magnet and electric circuit closed by a finger key.

[Printed, 8d. Drawing.]

A.D. 1868, March 16.—N° 893.

MURRAY, James, and **WARDEN**, Robert.—(*Provisional protection only.*)—" Improvements in lamps " for burning paraffin and other oils and spirit."

This invention consists, firstly, in constructing lamps and other apparatus for burning mineral or other oils and spirit in such a way as to dispense with the present style of oil reservoir. Secondly, in introducing improvements in regard to the burners whereby the lamps may be more easily lighted and extinguished. In carrying out the first part of the invention the stem of a standing lamp, the arm of a bracket, or the branches of a chandelier which at present carry or support a reservoir for the oil to act as conduits for the oil from a central reservoir to the burners are themselves in each case made the reservoir for the oil or spirit, dispensing thereby with any separate or distinct receptacle for the oil or spirit. Under the second portion of the said invention it is proposed to attach to the wick holder of the lamp a contrivance which on the wick being turned down for the purpose of extinguishing the lamp will by a self acting spring or wheel cover over the wick tube and completely extinguish any fire on the wick.

It is proposed to make and aperture in the air chamber of the burner covered by a moveable plate through which the wick of the lamp may be lighted without removing the glasses or globle.

[Printed, 4d. No Drawings.]

A.D. 1868, March 16.—N° 894.

JOHNSON, John Henry.—(*A communication from Auguste Colas.*)—" Improvements in the manufacture " of wheels for vehicles, and in the machinery or apparatus employed therein."

According to this invention, in lieu of first expanding the tyre and then contracting it after it has been adjusted in its place on the wheel, it is proposed to leave the molecules of the iron in the tyre in a state of perfect rest and to produce a contraction and expansion in the wooden portions of the wheel, thus in effect reversing the usual mode of proceeding.

This invention is carried out by the use of and inclined or dished platform, combined with compressing levers and a hydraulic cylinder for elevating the platform whilst the levers compress the wheel.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 16.—N° 895.

LIVSEY, PETER JOEL.—(*A communication from Ira Dimock.*)—(*Provisional protection only.*)—" Improvements in machinery for combing cotton and other fibrous materials."

These improvements consist in combinations and arrangements of mechanism for combing, namely, an oscillating frame with pinching feed roller or rollers, and detaching comb or pinchers in addition to the feed roller or rollers, which present the ends of the lap to be combed by a rotating comb drum, and then to an oscillating pair of detaching pinchers, which take and deposit the fibres on a doffer. Also in a similar arrangement to that above described, which delivers the combed ends of the fibres to stationary detaching rollers, and a double arrangement of the latter modification where one combing drum acts for both oscillating pinching frames. Also another modification, where one pair of oscillating pinchers detach an uncombed tuft, drawing the tails of the fibres through a detaching comb and present them to a second pair of pinchers, which deposit them upon a doffer, both oscillating frames taking the protruding fibres past a rotary combing drum.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 16.—N° 896.

GEE, JOSEPH SMITH.—" Improvements in ornamenting slate and such like materials to be afterwards " enamelled."

Applying the transfer process, or lithographic-transfer, or "Decalcomanie" process to the ornamentation of slate, marble, and other materials to be afterwards enamelled by means of alternate operations of varnishing, stoving, and finally polishing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 897.

SIMS, REUBEN.—(*Provisional protection only.*)—" Certain improvements in agricultural apparatus called " horse rakes."

The novelty and feature of the invention consists in applying the leverage and power obtained from the rotation of the travelling wheels to the raising of the teeth or " tines " of horse-rakes.

Secondly, in the combination of levers and cams, catch wheel and pawl, for the purpose, and of the combination of a hollow tube or frame having the solid axle passing through it; and,

Lastly, in the application of ratchet wheels and pawls so that the travelling wheels may rotate together or independently.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 898.

SMITH, ROBERT.—(*Provisional protection only.*)—" Improvements in the means and apparatus for " extracting foul air or gases from mines, sewers, brewers' vats, and other places."

My invention consists in a mode of extracting foul air or gases from mines, sewers, brewers' vats, and other sources by means of a vacuum. For this purpose I employ a pipe or pipes, the one end of which is in communication with the gases to be removed, while the other end is connected to the inlet valve or valves of one or more bellows.

In this manner on working the bellows by hand or other power a partial vacuum is produced in the pipe or pipes which will have the effect of drawing up the gases into the bellows, whence they are discharged on closing the bellows into the atmosphere or otherwise disposed of.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 899.

HULSE, WILLIAM, and **WILLIAMS**, EDWIN.—(*Provisional protection only.*)—" Improvements in the " manufacture and ornamentation of metallic bedsteads and other articles of metallic furniture, a part of " which improvements may also be applied to the ornamentation of metallic tubes and other metallic " articles."

One part of this invention consists in making the ornamental panels of the head and foot rails of metallic furniture in the following manner :—A plate of sheet iron to form the foundation of the panel is taken and holes made in it where ornaments are to be applied. This plate is placed between the two halves of a mould and melted cast iron is poured therein. Ornaments are thereby cast on opposite sides of the plate, the junctions of the ornaments being made by the metal running through the holes in the plate.

Another part consists in ornamenting the pillars of metallic furniture, and metallic tubes, and tubular sticks in the following manner :—

The pillar is first lacquered or a ground colour laid on, and after the coating has been hardened by stoving a coloured lacquer is applied, and upon the surface thus produced the design with which the pillar is to be ornamented is drawn or painted in asphaltum or Brunswick black; or the design may be transferred to the prepared surface. After the design has hardened the pillar is immersed in an alkaline solution, so as thereby to remove all the second coating of lacquer, excepting that covered by the design in asphaltum or Brunswick black. The pillar is next treated with a solvent, which will remove the asphaltum or Brunswick black. By the last treatment the design in coloured lacquer is exposed and the pillar has an ornament of the colour of the second coating of lacquer on a ground of the first coating of lacquer or other ground colour.

[Printed, 4d. No Drawings.]

A.D. 1868, March 17.—N° 900.

WOMERSLEY, Charles.—(*Provisional protection only.*)—"An improved lubricator."

The feature of novelty in this lubricator for picker spindles in looms more especially consists in lubricating the same by means of a saturated sponge or substitute contained in a closed box, but one portion of which is allowed to protrude through the end, to which a semi-circular guide is affixed, and when such guide is applied to the spindle the projecting sponge readily lubricates the desired part.

[Printed, 4d. No Drawings.]

A.D. 1868, March 17.—N° 901.

GEDGE, William Edward.—(*A communication from Remy Nicolas Legendre.*)—"Improved fuel, by "the use of which the kindling of fires will be greatly facilitated."

This invention consists in the impregnation of solid combustible bodies with an inflammable liquid, and thereby obtaining a fuel which facilitates the lighting of fires.

The inflammable liquids used are petroleum, schist and coal oils and the essences derived therefrom or from bitumen and from coal tar and alcohol.

The solid combustible bodies are coke, lignite, peat, charcoal, wood, maize stalks, and generally every kind of solid combustible which can be impregnated with an inflammable liquid.

The surfaces only of the solid body may be impregnated with inflammable liquid by simple immersion in an open receiver or by evaporation of the liquid in a closed vessel, or every part of it be impregnated by operating in vacuo.

[Printed, 4d. No Drawings.]

A.D. 1868, March 17.—N° 902.

MACNEILL, Sir John.—"Improvements in the construction of indicating apparatus for showing "the number of passengers carried in public conveyances during each journey and the amount of fares "paid."

The exit and entrance of passengers travelling by omnibuses or other conveyances is marked by means of 4 horizontal bars, the ends of which are furnished with markers of any suitable description which draw a line each time on a slip of paper placed on a revolving drum.

The mode of actuating these rods is as follows, that is to say, either by aid of a barrier or arm fixed at an angle of 130 degrees to the door, or by the motion produced by the depression of the steps of the omnibus, such depression being communicated to the rods by means of wires and cranks or rods, as may be found most convenient.

In the case of the bar or barrier, which is about 3 feet from the floor of the omnibus, on the door being opened to admit a passenger it is pushed back either by him or the conductor on closing the door after him, this communicates to them a slight horizontal motion sufficient to make a mark on the paper surrounding the drum of about ¼ to ½ an inch in length.

When the steps are employed, as is the case for the outside passengers, the depression by the weight of a passenger communicates a like motion to the bars by means of wires and cranks as above mentioned.

The drum on which the paper is placed is made to revolve in the following manner :—At the bottom of the omnibus is attached a metal plate about 3 inches square, furnished with two brackets or lugs, each having a hole for bearing the journals of an axis carrying a bar about 2 feet long, which moves vertically; the outer end of this bar projects from the bottom of the omnibus sufficiently to bring it in contact with a piece of thin flat steel projecting from one of the spokes of one of the hind wheels, the other end of this bar is connected by a movable joint to a vertical rod passing through the bottom of the omnibus, and projecting upwards so as to give motion to a ratchet wheel placed in a frame occupying a portion of the seat of the vehicle near the door, the upper end of this vertical rod is flat, and is furnished with a longitudinal opening for catching on the teeth of the ratchet wheel, when the horizontal bar is elevated by the metal piece attached to the spokes of the hind wheel, which occurs once in every complete revolution of that wheel, the effect being that the ratchet is drawn down one tooth at a time; this ratchet communicates motion by means of a spur wheel mounted on the same axis as the ratchet, with a toothed wheel bearing on its axis another spur wheel, which latter communicates motion to another toothed wheel, on the axis of which the drum is mounted and is loose thereon.

On each side of the drum is a ratchet wheel, one loose and the other fixed on the same axis with the drum, the object of which is that when the first toothed wheel revolves the fixed ratchet carries the indicating wheel round at the same velocity as itself, and when the latter ceases to act, which occurs when the omnibus stops, the opposite or loose wheel causes the drum to revolve for a short time by means of a main spring of a clock or by a weight.

The object of this maintaining motion is to enable the marker to trace on the paper at short intervals when the omnibus is standing still at a station on any part of the line of route.

As soon as the omnibus resumes its journey this ratchet wheel ceases to act and the drum is then carried round as before.

Should it be deemed necessary or advantageous, the drum may be actuated by means of clockwork.

In this case the levers, ratchet wheels, and pinions would be dispensed with.

[Printed, 6*d.* No Drawings.]

A.D. 1868, March 17.—N° 903.

VILLAMIL, PHILIP MARTIN. — (*Provisional protection only.*) — " Improved apparatus to facilitate the " ascending of gradients by locomotive engines."

This invention is intended to assist locomotive engines to ascend steep gradients, and consists principally of an iron or steel wheel or cylinder (supplied with two flanges), the curved surface of the the said wheel or cylinder being depressed at given intervals so as to form steps with the continuation of the curve, the outline of which steps may assume the form of a concave curve like a semicircle, an eliptical or parabolic curve, or that of a re-entering angle, the two sides of which are equal and symmetrical; or graduated steps that may run in a spiral direction from one flange to the other or merely to the middle of the curved surface to return by a reversed spiral to the level of the first graduated step.

This wheel is to be applied to an iron or steel beam or rail which is to be laid between and parallel with the ordinary rails, being so shaped as to fit exactly the various levels of the curved surface of the wheel; namely, salient convex steps or projections are to fit into the depressed concave levels or other depressions of the wheel, and *vice versâ.*

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 17.—N° 904.

HAZARD, HENRY HERBERT. — (*Provisional protection only.*) — " Improvements in coiling or revolving " shutters."

A revolving shutter or grating made of metal or wood to secure shop fronts or other openings, giving security and power of supervision.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 17.—N° 905.

LAKE, WILLIAM ROBERT.—(*A communication from Nathan W. Blanchard.*)—(*Provisional protection only.*) —" An improved substitute for hair stuffing and mode of manufacturing the same from vegetable fibres."

I take the fibre of the soap plant and boil the same in an alkaline solution; then after washing and drying the fibre I twist it into a rope, then steam and dry it, and pick it into portions of the desired length.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 17.—N° 906.

POISNEL, JEAN MARIE.—" Improvements in the manufacture of straps, belts, bands, pipes, and other " articles of india-ubber or similar fabric."

This Provisional Specification describes forming fabrics of threads of fibrous material covered with india rubber or other similar material woven or otherwise combined together.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 907.

THOMPSON, Joseph, and THOMPSON, John—" Improvements in machinery for shaping wood, " applicable especially for producing spokes for wheels."

This Provisional Specification describes a machine consisting of a frame, in which there is mounted a horizontal axis driven at a high velocity and having cutters fixed to it. Underneath the cutters there is a table, upon which the wood to be shaped is fixed. This table slides to and fro in a guide frame, which is mounted so as to be able to rock on the frame of the machine about an axis beyond the cutter axis. The table has a rack upon it, with which a spur wheel gears.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 17.—N° 908.

POISNEL, Jean Marie.—" Improvements in the manufacture of coverings for the feet."

This Provisional Specification describes forming coverings for the feet from a mixture of india rubber or india rubber cuttings with fibrous material and agents for producing vulcanization.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 909.

NEWTON, William Edward.—(*A communication from Alois Thoma.*)—(*Provisional protection only.*)— " Improvements in producing steel and cast steel, and in furnaces or apparatus used therein."

Conducting the products of combustion which arise from any suitable perfectly burned flame to the iron for the purpose of decarbonizing the same.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 910.

NEWTON, William Edward.—(*A communication from Alois Thoma.*)—(*Provisional protection only.*)— " Improvements in the process of preparing iron ore for smelting, and in furnaces therefor."

The invention consists in roasting the ore by means of the heated gases or products of combustion which are discharged from the smelting furnace or which are otherwise produced.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 911.

NEWTON, William Edward.—(*A communication from Samuel Curtiss, junior.*)—(*Provisional protection only.*)—" An improved apparatus for measuring and administering medicine."

Medicine is placed in a graduated vessel closed at the top and having a small reservoir at bottom to which is fitted a plunger. The liquid is allowed to escape from the vessel into the reservoir, from whence it is forced by the plunger into a spoon shaped orifice and administered to the patient.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 17.—N° 912.

SPENCER, John Frederick.—(*Provisional protection only.*)—" Improvements in working the valves " of steam and other engines."

First. The working Corliss or other similar valves fitted with detent gear by means of two radial arms, discs, or segments vibrating concentrically to the axis of the steam valve spindle; one of these being permanently connected to the eccentric and its rods, and the other permanently connected to the valve spindle and to the spring for closing the steam valve, and both connected to each other by the ordinary catch or detent which regulates the time of closing the valve or the time of disengagement of the two radial arms, discs, or segments.

Second. Closing Corliss or similar valves worked with detent gear by means of a partial vacuum formed under a piston when such piston is drawn outwards in a cylinder by the act of opening the steam valve itself.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 18.—N° 913.

URE, James Millar.—" Improved apparatus for lifting the driving wheels of a locomotive off the rails " when the locomotive is either running or stationary."

of generating steam or hot air, the construction of the boiler or furnace being such that the heating surfaces are formed of hollow receptacles or tubes, by preference those known as "Field" tubes.

VI. The use of a spring or springs to return the crane jib to its original position after the crane has been used.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 18.—N° 922.

TOWNSEND, Robert.—" Improvements in breech-loading fire-arms."

This Provisional Specification describes a moveable breech plate having cylindrical projections upon it to enter and lock the breech ends of the barrels, the barrels turning up to be loaded upon a transverse horizontal axis in the usual way.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 18.—N° 923.

NEWLANDS, Benjamin Edward Reina.—" Improvements in treating and obtaining products from " spent oxide of iron which has been used in gas works, or otherwise to separate sulphur from sulphuretted " hydrogen, and in the purification of sulphur obtained from such oxide of iron."

This Provisional Specification describes the treating with bisulphide of carbon, spent oxide from which sulphur has been separated by means of naptha, mineral oils, benzole, or turpentine to fit such oxide to be reused.

Also processes for separating ammoniacal and cyanogen products from oxide treated as above described, or with bisulphide of carbon, and for fitting the oxide to be reused.

Also the fitting spent oxide to be burnt for the manufacture of sulphuric acid by treating it with a solution of sulphur in bisulphide of carbon.

Also the purifying of sulphur separated from spent oxide by means of naptha, mineral oils, benzole, or turpentine, by treating it with bisulphide of carbon.

Also when sulphur has been extracted from spent oxide by means of bisulphide of carbon, the precipitating the sulphur by adding to the solution naptha, mineral oils, benzole, or turpentine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 18.—N° 924.

WRIGHT, Robert Alfred.—(*Provisional protection only.*)—" Improvements in the mode of and apparatus " for cutting and dressing millstones and other stones."

A diamond or other hard cutting agent is caused to travel over the surface of the stone in the desired direction and to revolve all the time on its own axis so as to be kept in *constant contact* with the surface of the stone while the cut groove or "crack" is being made or the cutting or dressing performed at the required part of the stone, the cutting part of the diamond or other cutting agent thus being the pole or end of the axis of rotation. Thus the stone is cut or dressed by a sort of grinding or a braiding action, or action of attrition instead of this being effected by chipping, striking, or straight scratching. An apparatus is described in which the diamond or cutting agent is held in a holder furnished with driving arrangements for causing it to revolve on its own axis in contact with the stone and for pushing or propelling it meanwhile in the required direction. Adjusting contrivances and guides may be added. Columns or other round or curved bodies may be dressed in the above manner while being turned in the lathe. And instead of moving the diamond or cutter over the stone to be dressed, the latter may move while the diamond or cutter's sole motion is that of revolving on its own axis while in contact with the stone.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 18.—N° 925.

LINNETT, John Barnes.—" Improvements in the means of producing optical illusions."

This invention consists in printing or otherwise producing on separate leaves or cards a series of different pictures in which the object or portion of the object which it is intended shall have the appearance of moving is represented in different positions. These leaves or cards are secured together after the manner of the leaves of a book, the leaves or cards being so arranged that they follow one another in the order in which the successive positions of the object or portion of the object are represented. By rapidly turning over the leaves or cards the several pictures are presented in rapid succession to the eye and the appearance of motion in the object is produced. The opposite sides of the leaves or cards may have different pictures on them.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 18.—N° 926.

WAILES, GEORGE.—(*Provisional protection only.*)—" Improvements in the manufacture of safes or strong " boxes."

Welding the plates of iron or steel safes together at the angles in lieu of rivetting or otherwise joining them.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 18.—N° 927.

WENKHEIM, SIEMON.—" A mode or method of combining a shirt and waistcoat or portions thereof so as " to be worn either as a waistcoat and shirt or as a shirt only."

So cutting, forming, and combining the pieces of material for a shirt as to enable the use of a waistcoat to be dispensed with by bringing the lower part or parts of this garment, which is dependant or flap-like, over the waistband of the trousers. The waistcoat-shirt-front thus formed may be varied in shape and form, and be variously combined according to the taste of the wearer.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 19.—N° 928.

HILL, PEARSON.—" Improvements in breaks for perambulators and other vehicles propelled by hand."

This invention consists in suspending an arm having a double hook from the under side of a perambulator or other vehicle propelled by hand, by preference over or near the front wheel thereof, which arm is so connected to a chain, cord, strap, or rod that on laying hold simultaneously of the handle of the perambulator and of the chain, cord, strap, or rod the arm is drawn away from the wheel, while on releasing the handle the arm is free to fall forward and the hook or hooks thereon catch either into studs formed on the rim of the wheel or into the spokes of the wheel, and thus prevent it from turning. An ordinary friction break may also be connected to the arm.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 19.—N° 929.

PARKS, BENJAMIN.—(*Provisional protection only.*)—" Improvements in machinery or apparatus for " seperating and crushing breeze or cinders in one combined action."

The novelty is seperating and crushing breeze or cinders in one combined action, and conveying away any materials not proper to pass through the rolls.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 19.—N° 930.

GREEN, CHARLES EDMOND, and **GREEN**, JOHN.—" Improvements in the manufacture of cartridges for " breech-loading fire-arms."

This invention consists in a new method of construction and manufacturing of military and other cartridges carrying their own ignition, which shoot out direct from the barrel, thereby entirely obviating the necessity of an expensive metallic or other case which requires to be extracted after each shot.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 19.—N° 931.

LAKE, WILLIAM ROBERT.—(*A communication from William Pitt Hoffman.*)—(*Provisional protection only.*) —" Improvements in ventilating windows and window blinds."

The object of my invention is to provide an improved window or ventilator, which may be either transparent or opaque, but which, while allowing free access to the air, will effectually prevent the passage of all dust, and is especially adapted to be used in railway carriages. To effect my object I provide a window frame of any suitable construction, and having the space ordinarily occupied by plain glazing filled with V-shaped troughs formed either of transparent or opaque material extending from side to side and partially filled with water supplied from above, so as to intercept and absorb the dust, while the air is allowed to enter the carriage or building fresh and cool from its passage over the water.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 19.—N° 932.

EDWARDS, JOB.—(*Provisional protection only.*)—" Improvements in props or supports for supporting the " roofs of coal or other mines."

This invention consists in making the said props or supports of tubes of wrought iron or steel, either open

at top and bottom or closed at top and bottom by solid plugs of wrought iron welded therein. Whe
bearing surfaces are required cast iron caps are attached to the tops and bottoms of the tubes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 19.—N° 933.

REDMAN, William.—(*Provisional protection only.*)—"Improvements in means or apparatu
"formation or building of cop bottoms in machinery for spinning and twisting cotton or other
"substances."

The novelty consists in,—

The application of a cam or tappet to the carriage of a spinning mule or a twisting jenny to act
"faller" and cause a traverse of the "faller wire" during the winding on of the yarn, and thereby p
crossings of the said yarn at the commencement of the cop, so as to secure the cop bottom.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 19.—N° 934.

ROWLAND, Ellis, and DALTON, John.—"Certain improvements in the method and arrang
"apparatus for closing dampers, which apparatus may also be employed for measuring liquids."

The novelty of the invention consists in the employment and combination of two hollow vessels, one
within another, the inner one or hollow plunger (or rod attached thereto) passing through a gland o
box in the cover of the outer, and the bottom of this inner vessel or plunger is provided with a valve
outwards, so that as the plunger descends the valve closes and the liquor is covered by the botto
plunger, and the plunger indicates in its descent by means of a finger the amount withdrawn by a
tap from the outer chamber. In adapting the mechanism for closing dampers, "louvres,"
the plunger is attached by a rod or chain to the door, and when the door is opened to supply f
furnace the plunger is lifted by such action, and as it gradually descends the door or shutters is or are
allowed to gradually close, and so the amount of air admitted for combustion is gradually decreased

[Printed, 8*d*. Drawing.]

A.D. 1868, March 19.—N° 935.

DAVIES, George.—(*A communication from Milton D. Whipple.*)—"Improvements in machi
"combing cotton and other fibres."

These improvements consist of a machine comprising a pair of feeding rollers, against one of whic
knife edge, a series of combs for combing the fibre, and brushes for cleaning the same, a pair of ni
seizing and holding the fibres, a vibrating comb with teeth inclined in an opposite direction to thos
series above mentioned through which the fibres are drawn, a revolving card cylinder, and a
comb and endless travelling apron for delivering the combed fibre through a pair of condensing ro
a receiving can.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 19.—N° 936.

LANE, John Edward.—(*Provisional protection only.*)—"Improvements in apparatus for he
"warming buildings or appartments and for other similar purposes."

The apparatus is composed of a series of oblong water chambers disposed horizontally one above
with flues between, through which the smoke passes to the chimney.

I dispose the furnace immediately below the water chambers, whereby a largely increased heatin
is obtained, and I prevent loss of heat by radiation by enclosing the top and sides of the boiler w
non-conducting substance.

The water chambers communicate at their ends with the water circulation pipes, and may be in g
less number and size according to the purpose desired. This apparatus is applicable for heating or
churches and other buildings or apartments, greenhouses, and for other similar purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 19.—N° 937.

RICHARDSON, William.—"Improvements in machinery for the manufacture of bricks and tile

This invention refers to making bricks and tiles from crude or untempered clay. According to
improvement a preparatory article is formed in a charger which delivers it to the pressing mould. S
perforated bricks or tiles are made by the use of studs projecting through the piston or mould. Th
moulds are lubricated by a water pipe, the supply to which is regulated by the motion of the machin

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, March 19.—N° 938.

WARNER, Frederick, and CHOPPING, Henry.—" Improvements in windmills."

According to this Provisional Specification the sails which are arranged in a ring are divided into arcs, and each arc can feather separately; springs which keep the sails up to their work, yielding as the wind increases in strength.

The sails are sometimes arranged so that if the mill gets tail to wind the sails can blow out without injury.

For a portable mill the base is constructed as a water tank.

[Printed, 1s. Drawings.]

A.D. 1868, March 19.—N° 939.

HOOPER, William.—" Improvements in treating india rubber and in the manufacture therefrom of " fabrics and of insulated telegraphic conductors."

According to this Provisional Specification india rubber is heated in a closed chamber before masticating, grinding, or dissolving it.

Also a fabric is produced by applying a solution of india rubber containing sulphur to a batt or fleece of fibre, and the india rubber is converted by heat.

Also where a conducting strand is insulated by vulcanized india rubber the central wire of the strand is coated with india rubber or a compound of india rubber into which the outer wires bed themselves.

[Printed, 4d. No Drawings.]

A.D. 1868, March 19.—N° 940.

GEIGER, John Lewis.—(*A communication from Eugene Duseigneur Kléber.*)—(*Provisional protection only.*) —" Improvements in doubling, twisting, and throwing silk, and in apparatus therefor."

This Provisional Specification describes unwinding fibres from two revolving bobbins and winding them upon a single bobbin. Two of the last mentioned bobbins then have their fibres in the same way wound upon a single bobbin, and thus the fibres are thrown together.

[Printed, 4d. No Drawings.]

A.D. 1868, March 19.—N° 941.

TRUEMAN, Russell William John.—" Improvements in machinery or apparatus for collecting and " removing mud from the surface of roads and streets."

This invention relates to an improved arrangement and combination of apparatus intended to be worked by horse, steam, or other power for the collection and removal of mud and other accumulations from the surface of roads and streets.

According to one form or arrangement of machine I combine a mud cart with a mud collecting and removing apparatus, the said two parts of the machine being each mounted on running wheels of its own. The mud cart which forms the leading or fore part of the machine is provided with a covered receptacle into which the mud is discharged from an adjustable spout or shoot carried by the hinder portion of the machine. One of the wheels of this part of the machine has a series of buckets or elevators, either fixed or moveable, formed in its rim, into which the mud is scraped by a scraper or brush set at an angle or otherwise to the track of the machine, so that as the whole progresses the mud will be gradually collected to one side of the track and forced into the elevating buckets in the lifting wheel, which discharges it into the inclined shoot or spout above referred to. If desired, a spiral brush may be employed in lieu of a scraper, this brush being rotated from the machine itself in such a direction as to drive the mud, &c. into the elevating buckets of the lifting wheel.

According to another modification, which I prefer, I dispense entirely with the mud cart in front, and substitute for the inclined shoot or spout before referred to, a mud receptacle into which the lifting wheel discharges direct. This receptacle is to be emptied when full into the ordinary scavengers' carts or other receivers. A snow plough is provided for use in heavy falls of snow, and a heating apparatus applied in order to keep the tank or receptacle at a sufficiently elevated temperature to melt the snow, which is allowed to run off by an overflow pipe.

[Printed, 10d. Drawing.]

A.D. 1868, March 19.—N° 942.

ENCAUSSE, Louis.—" Improvements in the application of remedial agents to the human frame, and in " the apparatus employed therein."

This invention consists of an arrangement of apparatus for administering mineral and other medicated vapour bath. A steam generator supplies steam to one or more separate vessels or receivers through which the steam passes on its way to the closed chamber forming the bath, and in which receivers the steam takes up or becomes charged or impregnated with the mineral or other medicinal substance to be administered.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 19.—N° 943.

CHAMBERLAIN, Humphrey, CRAVEN, John, and WEDEKIND, Hermann.—(*Partly a communication from Friedrich Hoffmann.*)—" Improvements in the burning and drying of bricks, lime, cement, and " other like substances, and in the kilns employed therein."

This invention consists, *firstly*, in producing a forced combustion in what are known as Hoffmann's kilns by forcing air therein or exhausting the gases and products of combustion therefrom by mechanical blowers or exhausters, whereby tall chimnies are dispensed with, and as the steam and products of combustion are more rapidly removed a better quality of burned goods is obtained.

Secondly. In constructing a small fire grate with air holes below over some or all of the firing holes over the chambers containing wet or green bricks in the process of drying, whereby a mixture of hot and cold air is drawn down into the drying chamber, causing the goods to be better and more rapidly dried, and improving their color.

Thirdly. In placing a removeable hollow feeding cone with a contracted mouth into some or all of the feed pipes in the firing holes of that portion of the kiln which is burning, whereby the great inrush of cold air whilst the fuel is being introduced is checked and any outrush or escape of gas or hot air is prevented.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 19.—N° 944.

SHAW, Henry Franklin.—" Improvements in machines for overcoming resistance."

This is an improvement in differential gear hoisting machines. Upon a revolving shaft are fixed two eccentrics; upon these two eccentrics are hung two pullies, free to revolve independent of the shaft. One of these pullies has upon its inner face an internal gear, while the other pulley has a corresponding gear of less number of teeth cut upon a part of its external face, so that when the two are hung upon their eccentrics some of the teeth of the gear mesh into each other. If one of these pulleys is held and the shaft be made to revolve the unconfined pulley will have a slow motion around its own centre. If the motion of both of these pulleys is resisted by an equal force, they will revolve slowly in opposite directions, each serving as an abutment for the other, and thus exerting a great force which may be utilized by any of the mechanical expedients for connecting the working parts to the work to be accomplished.

It is possible to hang one of the wheels or pulleys on the revolving shaft and the other upon an eccentric, but this form, though embodying the principle, is not so elegant in its motion as the one above described.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 20.—N° 945.

SIDE, Robert.—(*Provisional protection only.*)—" A compound lever introducing gravitation as a motive " power to supersede a considerable amount of steam power."

It consists of two shafts lying horizontally and parallel with each other, with cranks revolving within each other by means of two small cog wheels working within each other at one end of the shafts, or at any part of it, causing one crank to fall outwards and the other to rise inwards, keeping the rising crank near to the centre of gravity and removing all pressure off the rising crank, the lever bar always falling with all its weight on the descending crank, carrying it to the bottom, and the rising crank to the top ready for the other end of the lever bar to fall on it and force it to the bottom in its turn. The manner in which the lever beam acts on the cranks is as follows :—The lever beam has two circular orifices in which two circular slots move, one attached to each of the cranks and situated one on each side of the centre of gravity and near the centre of the lever beam; by this means the upper end of the lever beam is always the longest, and through this cause always falls on the descending crank.

The lever must be the same weight in metal as the weight required in steam power, the steam merely striking the lever where gravitation is nearly balanced.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 20.—N° 946.

TATTERS, James Graham, KEEBLE, Walter, and NEWBERY, Benjamin.—" Improvements in the " preparation of cigars and mode of lighting the same."

The ends of the cigars intended to be ignited are dipped into a mixture composed of gum, nitrate of potash, charcoal, chlorate of potash, and water. A strip of paper, gummed on one side and coated with a mixture of gum and amorphous phosphorus on the other is then wound around each cigar and secured with gum. In order to light the cigar the paper should be torn therefrom and struck against the end of the cigar which has been prepared, when ignition will be produced,

The novelty of this invention consists in preparing cigars so as to carry the means of ignition as described.

[Printed, 4d. No Drawings.]

A.D. 1868, March 20.—N° 947.

MATHER, Colin.—(*A communication from Charles Grandison Sargent.*)—" Improvements in machinery and " apparatus for opening and cleaning wool and other fibrous substances."

The machinery consists of a creeper, a pair of feed rollers, a picking cylinder or toothed drum, a fine toothed cylinder, and a revolving guard, also a revolving brush and a fan. The above parts are in common use. My improvements consist, first, in an improved mode of constructing the picking cylinder; secondly, in the application of an adjustable register air valve to regulate the currents of air entering under the revolving guard; and, thirdly, in applying a condensing apparatus to opening and cleaning machines, which condensing apparatus consists of a creeper and a wire gauge or perforated cylinder to form a web or fleece of fibres.

[Printed, 10d. Drawing.]

A.D. 1868, March 20.—N° 948.

PINKNEY, William, and CALVERT, Robert.—(*Provisional protection refused.*)—" An improved mode " of applying a jet or jets of steam to blacksmiths' fires, cupolas, mill furnaces, smelting and refining works " for directing hot or cold blast thereinto, applicable also for ventilating mines and buildings, and for other " purposes to which a blast is applicable."

The novelty of this invention consists in discharging a jet or jets or current or currents of steam into and through funnel shaped pieces or nozzles fitted on to the ends of one or more pipes or air chambers, according to the purpose for which the blast is required, so as to convey a current of hot or cold air into blacksmiths' fires, cupolas, mill-furnaces, smelting and refining works, also in mines and buildings for ventilating the same, and in applying this improved method of obtaining a blast to other purposes where a blast is applicable.

[Printed, 4d. No Drawings.]

A.D. 1868, March 20.—N° 949.

MELDRUM, Robert.—(*Provisional protection only.*)—" Improvements in steam engines."

The improvements are applicable with two or more cylinders, but will be more conveniently and clearly described in connection with one only. The cylinder has in connection with it any suitable existing arrangement of valves and valve gear for admitting steam into the opposite ends of it alternately. Communications are formed between the two ends of the cylinder and a cistern containing water, and these communications are controlled by valves actuated either along with or independently of the steam valves. The steam after forcing the piston to one end of the cylinder is condensed by the ingress of the water, and the piston being simultaneously acted upon by steam on the opposite side returns in the opposite direction, after which the steam which produced the return stroke is in its turn condensed in the same way. An important feature of the invention is the arrangement for returning part of the water to the boiler and part to the cistern. In one modification suitable for a vertical steam cylinder a tubular rod is fixed to the under side of the piston, and works like a pump plunger in a barrel fixed to the bottom end of the cylinder. The water above the piston enters the tubular rod by a float valve (which closes when surrounded with steam), and on the piston rising the water passes out of the rod into the pump barrel by a valve at the bottom, which prevents its return. The descent of the plunger or rod then forces the water through valves in two pipes, one leading to the boiler and the other to the cistern. A pipe fitted with valves communicates between the bottom of the pump barrel and the bottom of the cylinder, and the water finds its way thereby from the latter into the pump barrel. In the case of horizontal cylinders a separate pump may be used to draw off the water from the cylinder and force it back into the boiler and cistern, the inlet to the pump having branch pipes communicating with the opposite ends of the cylinder.

[Printed, 4d. No Drawings.]

A.D. 1868, March 20.—N° 950.

BROWNLIE, Archibald.—(*Provisional protection only.*)—" Improvements in apparatus for heating air " for grain kilns."

This invention relates to the heating of air for drying grain in grain kilns. The air is heated by being forced or drawn by a fan or other blowing apparatus through cast iron pipes exposed to the heat of a common fire. The improvements consist in the construction and arrangement of the pipes in the fire chamber or furnace. Two long parallel cast iron boxes are disposed horizontally at a convenient distance apart, and the inlet air pipe communicates with the inner end of one box, whilst the outlet pipe communicates with the outer end of the other box. The two boxes communicate with each other by a series of pipes of a horseshoe or arched form, which are placed vertically, being fitted into faucetted openings formed in the tops of the side boxes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 20.—N° 951.

TAYLOR, William, and TAYLOR, Charles Edward.—" Improvements in stands or tables for " sewing machines and other purposes."

The invention consists in constructing the stand or table of frames or standards, the parts of which are so found as to enable them to be passed between, across, or through each other, and are united together by clips, rings, or stays formed in two or more parts united together by screws. A suitable top may be screwed to the upper parts of the frames, or they may be made in the shape of a vase or to receive a vase, lamp, or other article.

When used for a sewing machine stand, an axis with treadles mounted thereon is fixed in the lower parts of the frames, whilst a driving wheel is carried by a stud fixed to one of the frames.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, March 20.—N° 952.

ABRAHAM, John, and BAYLISS, Thomas Richard.—(*Letters Patent void for want of Final Specification.*)—" Improvements in central fire cartridges for breech-loading fire-arms."

According to this invention the cases or shells of the cartridges are made wholly of metal, or partly of metal and partly of paper or other non-metallic material. In the metal cases or shells longitudinal or oblique or helical incisions or depressions are made to permit the cases to expand on firing and prevent the escape of gas, and also to contract after firing. In the base of the cartridge is a percussion chamber made from a disk or blank of metal, the edges of the disk being fixed between the rim of the cartridge. In the percussion chamber a percussion pin is inserted from the base of the cartridge; the bottom of the percussion chamber is convex and constitutes an anvil, and the inner end of the percussion pin is made concave, the concavity holding the fulminate. On striking the percussion pin its primed end strikes against the convex bottom or anvil of the percussion chamber and ignites the cartridge, the flash passing through a hole in the bottom of the percussion chamber.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 20.—N° 953.

COOPER, John Henry.—" Improvements in the manufacture of boots for hunting, shooting, fishing, " and other uses."

According to this invention the leg and foot of the boot is cut out of one sheet of leather; the heel piece is then attached and a golosh or double front may be used if required. The boot is tightened to the instep by a strap, and if necessary also round the calf.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 20.—N° 954.

GUNNER, Charles.—" Improvements in life-boats."

According to this invention a boat is provided with cabins at each end and centre, with seats between for sailors; the gunwales are airtight, and an air ball or receptacle is attached to a vertical rod pivoted midway between the gunwales, to which it is attached on each side by elastic bands. Thus, when the boat capsizes, the air ball instantly elevates either of the gunwales and the boat becomes righted.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 20.—N° 955.

BADE, Jacob Hermann Cesar.—(*Provisional protection only.*)—" Improvements in close fire ranges."

I provide my improved range with a double bottom, the boiler, oven, and furnace chamber being erected on the upper or false bottom.

The furnace chamber is built up on either side with fire bricks, the heat and products of combustion passing away at one side over the oven, down the side thereof, and under the false bottom (which is left open at the

the purpose) to the boiler under and behind which it passes to the chimney, the heat surrounding
being equal at all points.

oiler which extends from the top of the range to the false bottom is provided with an air space
it and the side of the range to prevent loss of heat by radiation.

himney is provided with a damper for regulating the draft and escape of heat. These improvements
what are known as close fire ranges.

ted, 4*d.* No Drawings.]

A.D. 1868, March 20.—N° 956.

, **George**, and **BATEMAN, Hyde**.— " Improvements in the manufacture of corkscrews."

nvention refers to improved methods of constructing the worms and screws of corkscrews, with
r withdrawing the corks when penetrated, also to the construction of the handles whether loose or fixed,
her to the formation of flexible barrels or barrels containing contracting or expanding springs.

ted, 10*d.* Drawing.]

A.D. 1868, March 20.—N° 957.

, **Sidengham**.—(*Partly a communication from Ernest Thorold.*)—" Improvements in the manufacture
cking for stuffing boxes, pistons, and bearings."

stic compound is used as a packing, the same being composed of wood chips or other fibrous sub-
ombined with a moistened mineral lubricant.

ted, 4*d.* No Drawings.]

A.D. 1868, March 21.—N° 958.

S, George.—(*A communication from Samuel Golay.*)—" Improvements in apparatus to be used in
anufacture of millstones and in the working of hard stones in general."

invention relates to the subject-matter of former Letters Patent granted to the petitioner, and dated
th, A.D. 1867, No. 1245; and consists of an apparatus whereby the same principle of chipping with a
tooth therein described as adapted for dressing the furrows of millstones and intended for millers' use
red applicable for working the stone in the rough, so as to be available for millstone manufacturers,
for working down and levelling the millstones when put together, but also for dressing the pieces of
is composed before they are put together.

ted, 10*d.* Drawing.]

A.D. 1868, March 21.—N° 959.

SON, Edward Daniel,—" Improvements in the construction of pocket watches."

osing the object desired is to measure a short period of time without viewing the watch, and that the
standing at zero by pressing the button on the pendant the index will be started. On repeating the
the index is suddenly arrested and retained at its advanced position, where it may be left for any
f time without interfering with the going of the watch. A third pressure on the button instantly
the index to zero and simultaneously an audible signal will indicate that return.

ted, 8*d.* Drawing.]

A.D. 1868, March 21.—N° 960.

R, Isaac Solly.—(*A communication from George Deas.*)—(*Provisional protection only.*)—" Improve-
s in hats and other coverings to the head to obtain ventilation and comfort in wear."

improvements relate to obtaining comfort in wear and ventilation by substituting for the ordinary
next the head a pair of bands of flexible material, employing for the purpose by preference that called
nite," such bands being adjustable in size by the ends of them being connected by sliding connection.
nd is fitted close to the hat or other covering by sewing or otherwise. The other is connected to it by
nd elastic and sliding connections, and at a distance therefrom to admit of the passage of air between
tilation.

hese means correct adjustment to the head may be obtained with ready ventilation and capability of
ne lining being applied in succession to several hats or other coverings.

nted, 4*d.* No Drawings.]

A.D. 1868, March 21.—N° 961.

DONA, George, and **HILLIARD, Osborne**.—(*A communication from Casimir Comte de Mankowski.*)
nprovements in means and appliances for conveyance, transport, and locomotion."

Our invention consists in arranging the conveyance in such a way that the wheel or wheels which carry it shall each work or travel within a circular wheel of much larger diameter, having within its inner periphery a rail upon which the wheel of the carriage works, thus while the carriage wheels turn upon their own axles they move along the rail of the great wheel and cause it to rotate and move forward.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 21.—N° 962.

BOULTON, William Staples.—" Improvements in lawn mowers."

This invention consists in placing the bearings of the axes of the knife or cutting barrel and of the intermediate wheel which gears with the wheel on the axis of such cutting barrel and with the main driving wheel of lawn mowers on a radial link or links which is or are concentric with and vibrate round the bearing of the main roller and driving wheel, so as to retain the intermediate wheel in proper gearing contact with the two wheels with which the same is in gear whenever the axis of the cutting roller is raised or lowered as occasion may require. Also in attaching the main driving wheel to the axis of the roller or driving barrel by forming a conical bearing for such wheel on the axis of such driving barrel and fixing such wheel, and causing the same to be actuated or carried round on the axis of such driving barrel or roller by tightening the main driving wheel on such conical bearing by means of a nut screwed on the said axis. This nut has an internal projecting conical surface, so that by loosening it the driving roller or barrel may, if desired, be free to revolve without driving or actuating the main driving wheel or other wheels or parts of the said apparatus or machine.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 21.—N° 963.

SPONG, James Osborn, and **HADDAWAY**, John Frederick. — (*Provisional protection only.*)— " Improvements in blow-pipes."

According to this invention the flame and blowpipe are combined or contained in one instrument.

At a point near the end of the blowpipe a vertical revolving receptacle is placed in which cotton or fibrous material is supplied, saturated with spirit or hydrocarbon.

This vessel or receptacle has a false bottom into which the blast is conducted, passing out into a terminal curved outlet pipe acting horizontally on the flame. By these means the jet of flame may be directed to any portion of the work by turning the revolving chamber.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 21.—N° 964.

HUDSON, Walter Greville Conyers.— (*Provisional protection only.*)—" A new or improved sandal " or overshoe for preventing slipping in frosty weather and other uses."

According to this invention a sole is formed of felt or other similar material, mixed or not with leather, india rubber, or such like msterial, a band or toe piece being attached thereto to come over the boot.

The sole may extend only to the bridge of the foot, or it may be continued and supplied with a heel; a strap or band passes over the instep, and is crossed to the back of the heel, where it is fastened by a buckle or otherwise; this strap is attached to the upper part of the sandal and secures it to the foot, or the band may be passed to the heel direct.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 21.—N° 965.

BESSEMER, Henry.—" Improvements in the manufacture of refined iron and of malleable iron and " steel."

This Provisional Specification describes forcing into molten crude iron or remelted pig iron or other carburet of iron in a more or less refined state streams of fused or fluid nitrate of soda or nitrate of potash, or other fused or fluid substances which contain or are capable of evolving oxygen when brought into contact with fluid iron; such substances being used alone or in conjunction with oxides, peroxides, or silicates of the peroxides of iron or manganese, and being projected downwards on to the metal from nozzles or tuyeres.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 21.—N° 966.

JENNINGS, Josiah George.—" Improvements in water closets, and in apparatus for supplying water, " and in sewers or drains for receiving the same."

This Provisional Specification describes a water closet constructed with a valve which is held up against a face by a counterbalance weight sufficient to retain in the pan only as much water as it is desired, and capable of being opened by the handle of the closet.

escribes the use of a measure vessel containing a syphon to supply water to a closet or other a tap.

escribes a form of skew back blocks for sewers.

escribes the forming hollow invert blocks with closed ends.

2s. Drawings.]

A.D. 1868, March 21.—N° 967.

R, **Henry**.—" Improvements in the manufacture of malleable iron and steel, and in apparatus uch manufacture."

g to this Provisional Specification iron of low quality is operated upon in a converting vessel of steam and air in small quantity so as to keep the metal for a time at about a puddling heat, eing thus agitated by the blasts; it may also be stirred by a rabble or puddling tool if desired. the metal is as it were puddled, cast iron of good quality is run into the vessel and the mixture to a brisk air blast so as to develope sufficient heat to render it completely fluid and fit for convenient apparatus for carrying on this process is described.

cification also describes the melting of wrought iron in various forms in a bath of cast iron by heat generated by ordinary fuel, assisted by the heat generated by blasts of air acting upon the tal.

1s. Drawing.]

A.D. 1868, March 21.—N° 968.

OW, **Robert Gawthorpe**.—" Improvements in breech-loading fire-arms and cartridges."

n opening in the rear end of the barrel for the insertion of the cartridge, and in rear thereof, and the barrel I fix a solid plug on which is fitted a short tube so as to slide back and forth for d closing the breech cavity, said breech closing tube being operated by a projecting knob or working in a bayonet slot in the side of the breech which is locked when in the forward position r rotating said breech closing tube.

make a groove in the bottom or interior of the breech and fix a stud on the sliding tube with a ect.

ridge is to be inserted into the cavity with its nose in the end of the barrel, it being supported in the rear in front of the fixed plug by making the cap to project and enter a groove in the end of In this manner the sliding tube may be readily brought forward over the cartridge to close the

ridges used are on the central fire principle, and besides the projecting cap at the rear end I taper ase on to the nose of the bullet, so that said case may slightly enter the barrel and form a joint the escape of gas at the junction between the barrel and breech closing tube, by expansion

10d. Drawing.]

A.D. 1868, March 23.—N° 969.

, **Edward Kenworthy**.—" Improvements in valves employed to regulate the flow of water." ention relates to the class of valves known as ball valves. In the improved valve the float is y a tumbling weight so that a quantity of water may be withdrawn from the cistern before the , and that the quantity withdrawn shall be replaced before the valve shuts, the valve remaining during the time the cistern is being filled. The float is most suitably of an elongated form, and radius struck from the centre of motion. In the case of valves of a large size the float is caused small valve to admit the water to act upon a diaphram or piston, the action of which is transhe large valve to open the same. The packing consists of a ring of leather or other suitable ted into an annular recess in the valve. This mode of packing is applicable to other valves.

10d. Drawing.]

A.D. 1868, March 23.—N° 970.

UF, **Victor Adolphe**.—" Improvements in machinery or apparatus for the manufacture of sed or moulded fuel from small coal and other material."

f features of novelty in this invention are,—

of eccentrics to drive the mould plate; the construction and application of the peculiar shoot the moulds; the peculiar construction of feed-press with its arms for regulating the delivery to s; the substitution of cast iron balls for bevil wheels for the purpose of carrying the mould e use of two cylinders for compressing the fuel; an arrangement of lever with cast iron piece and block of wood to take shock of piston in its descent; the use of rollers on which the blocks are received from the mould; and the use in these machines of endless chain of wagons.

[Printed, 2*s.* 4*d.* Drawings.]

A.D. 1868, March 23.—N° 971.

POPE, Thomas.—(*A communication from Charles H. Cleveland.*)—" Improvements in braces or suspenders."

The said invention consists chiefly in the peculiar manner of arranging shoulder straps in combination with two pieces of leather or other material, which are attached to buttons or other fastenings on the garments to be supported. The shoulder straps are constructed of elastic webbing or other suitable material, and may be provided with the ordinary sliding buckles. The buttons on the garment are arranged immediately over the hips. The shoulder straps cross each other just below the neck, where the shoulder blades meet, and are united below the armpits. To adapt the suspender to ladies' use, a back strap may be provided to connect to a button at the back of a skirt or other garment.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 23.—N° 972.

LAKE, William Robert. — (*A communication from Joseph Wild Branch and Joseph Crookes.*) — " Improvements in metal ties or bands for securing bales of cotton or other substance."

I use a crescent formed tie piece consisting of three straight longitudinal rails and two curved end rails, and provided with two apertures to receive the ends of the hoop. One of these ends is bent or folded back over one of the longitudinal rails. The other end, after the hoop has been arranged around the bale, is passed through the tie piece and lapped over the said bent or folded end. The lower corners of the central rail should be made with sharp or acute edges to take a better hold upon the hoop. The tie piece is placed with its convex side towards the bale, and thereby holds the ends of the hoop tightly down upon the same.

[Printed, 6*d.* Drawing.]

A.D. 1868, March 23.—N° 973.

HOLMES, Samuel.—" Improvements in lamps for burning oils and spirits."

Peculiar arrangements of non-conductors in lamps, and mechanical means for regulation and extinction of the light.

[Printed, 1*s.* Drawings.]

A.D. 1868, March 23.—N° 974.

BROOMAN, Clinton Edgcumbe.—(*A communication from Désiré Sival and Léon Sival.*) — (*Provisional protection only.*)—" Improvements in machinery for the manufacture of lace."

Reference is made to Letters Patent No. 1087, 1865. The invention consists in the combination of a separated passage of each bobbin thread at the side of its carriage with the employment of two points for every carriage to effect the raising of all the twists as they are produced at the right or at the left of the carriages; this is effected by a notch in the carriage communicating by a hole with the usual groove or furrow.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 23.—N° 975.

PAULUS, Henry. — (*Provisional protection only.*) — " An improved pile driving engine, with modifiable " length of stroke of the ram, applicable also to other purposes."

This invention consists in dispensing with the ordinary catch which after each stroke of the ram has to lower in order to seize and take it up again, and in carrying up the ram by means of an endless chain, each link of which is so made that it can catch a ⊢ shaped sliding bolt placed on the top of the ram and provided with friction rollers running against an iron plate fitted between the uprights.

When the ram or monkey reaches the desired height a helical spring drives the bolt rollers into an aperture in the plate, the bolt escapes from the chain, and the ram falls. As the ram strikes the pile an inclined plate forces back the bolt so that it enters a link of the chain, which carries it up again.

The inclined plate moves down with the pile, and the sliding plate or plates are made to shift in order to modify the stroke of the ram when desired.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 23.—N° 976.

BRÖNNER, Julius.—" Improvements in the construction of gas burners."

This invention consists in forming the top or head of a gas burner so that the outside is concave or funnel shaped, whilst the inside may be convex, concave, conical, funnel shaped, or flat, and in making a slit in

wed or sunken burner-head. The effect produced is that the gas flows from both ends of the slit
ne centre, where both streams meeting and flattening spread into a flame standing at right angle
, instead of following its shape as in ordinary slit burners.
lity of this construction is that it unites the advantages of the ordinary two hole fishtail and of the
ng burner, while avoiding their faults.
w burner is applied to the formation of compound (double or economic) burners by using a single
t burner as upper and another as under burner, by setting a fishtail slit burner on the body of an
burner, or by the insertion of the head of a fishtail slit burner in the bottom, top, or middle of the
burner, with its concave side upward or downward.
, 8*d*. Drawings.]

A.D. 1868, March 23.—Nº 977.

IOTT, Charles.—(*Provisional protection only.*)—" An improved indelible pencil for marking
d other fabrics."
libility.
d, 4*d*. No Drawings.]

A.D. 1868, March 23.—Nº 978.

orge Fuller.—" Improvements in the manufacture of sugar and other alimentary substances
etroot."
ng to this Provisional Specification the beetroot is first cooked and afterwards the juice is pressed
pulp is used for cattle food and it is dried.
, 4*d*. No Drawings.]

A.D. 1868, March 23.—Nº 979.

Claude Nicolas.—" Improvements in grease cups or apparatus for lubricating machinery."
ng to this Provisional Specification a pipe or passage communicating with the surface to be lubricated
ith a glass cup to contain the lubricant which is pressed upon by a piston fitted with a cupped
d air valve opening inwards. A coiled spring bears on the piston.
, 6*d*. Drawing.]

A.D. 1868, March 23.—Nº 980.

R, Alfred William, and WILSON, Frederic Warner.—(*Provisional protection only.*)
vements in breech-loading fire-arms and cartridges."
e the end of the barrel open for the insertion of the cartridge and close it by a quadrant shaped
ted below the breech and working transversely in a recess made at one side.
ng, the quadrant plate, is pulled outwards so as to disclose the bore for the introduction of the
the plate is then pressed backwards, closing the barrel and enclosing the cartridge.
is further jointed to the quadrant plate, having a wedge shaped end, which arm works in a slot in
te side of the breech and serves to half-cock the hammer by pulling it downwards on opening the
he nose projects from the breech so as to prevent the discharge until the breech is completely

rovement in cartridges consists in substituting a tube containing the fulminate instead of a pin
now used. These cartridges we introduce at the open end of the barrel as before described, the
n being received in a slot made in the side of the breech for its reception so as to slightly project.
nner the hammer in rising strikes the tube against an anvil or projection formed on the breech and
he explosion of the fulminate for discharging the cartridge.
, 4*d*. No Drawings.]

A.D. 1868, March 23.—Nº 981.

illiam Robert.—(*A communication from Joseph Wild Branch and Joseph Crookes.*)—" Improve-
n metal ties or bands for securing bales of cotton or other substance."
gated button with rounded ends is riveted to one end of the hoop, whose other end is pierced with
formed apertures or slots. The button has a square shank, and is thereby secured in an oblique
pon the end of the hoop. The apertures or slots are made parallel with the sides of the hoop, and
he insertion of the button into one of these holes to secure the band upon a bale the two ends of the
st be twisted. When the two ends are connected they resume their parallel position, and the edge

of the slot enters a cavity formed under the head in the side of the button. This cavity allows the button head to overlap the hoop at the edge of the slot, and thereby keep the two parts of the hoop properly together. The part of the shank which forms the bearing whereon the strain is exerted is curved to correspond with the end of the slot, and is formed with a projecting lip which assists in keeping the two ends of the hoop together. The other end of the button behind the shank is formed with a shelf which rests upon the hoop and strengthens the shank by keeping it closely up to its work.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 23.—N° 982.

DE BERGUE, Charles.—" Improvements in locomotive engines, and in the modes of transmitting the " power of a locomotive engine to the tender and other carriages of a train for converting their wheels into " driving wheels."

The driving the wheels of locomotive engines from the cylinders through the intervention of lever arms and rocking shafts, and in addition, or instead of to the wheels, the application of the power to connecting rods for transmission to the wheels of the tender and of the carriages. Also the transmitting the power to tender and carriages through the intervention of lever arms and rocking shafts on the tender and carriages by continuous systems of flexible or jointed connecting rods and the driving the tender and carriage wheels from such arms and shafts so as to render the said wheels driving wheels. And also by means of **Z** shaped double cranks, and **S** or serpentine shaped connecting rods, so formed and disposed that the bearings may lie in the (plan) centre line of the train and work free of each other.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 23.—N° 983.

VIGNIER, Evariste.—(*Provisional protection only.*)—" Improvements in distilling and rectifying spirits, " and in apparatus employed therein."

This invention relates to the filtering of the wash in charcoal filters, and to the heating of the same before it enters the column in the still. Also to the use of a separate box or chambers in the refigerator for facilitating the reduction of the strength of the spirit to any desired degree before it leaves the apparatus. Also to the use of a column of several chambers, some of which are supplied with fatty or oleagenous matter, or with neutral essential oils, for the purpose of eliminating the essential oils from the alcohol. The lower part of the still is divided by a vertical partition into two chambers, the one for the spent wash and the other for steam, the steam being used for the cleansing of the filters which are made in duplicate, so that when one is in operation the other may be cleansed. The fatty matter in some of the chambers is kept at a proper temperature by a steam coil therein, and those chambers are kept supplied with the fatty or other matter employed from a suitable supply reservoir.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 23.—N° 984.

BARCLAY, Andrew.—(*Letters Patent void for want of Final Specification.*)—" Improvements in barometers, thermometers, and in their combination with watches, clocks, and other instruments."

The features of novelty which constitute this invention are, 1st, the special arrangement of barometers, whereby they are rendered suitable for combining with watches so as to form one combined portable instrument. 2nd. The special arrangement of thermometers, whereby they are rendered capable not only of being combined with watches or clocks, but of registering the variations of atmospheric temperature and the period of their duration.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 23.—N° 985.

NEWTON, Alfred Vincent.—(*A communication from Auguste Bernard Albaret.*)—" Improvements in " thrashing machinery."

A self-adjusting concave is applied to thrashing machines, and a dust collector is provided to receive the dust and refuse and prevent its becoming mixed with the thrashed corn. The toggle joints for the shaker bars are protected by a shield.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, March 23.—N° 986.

TREVERTON, Hender, and FOWLER, Edward Henry.—(*Provisional protection only.*)—" Improvements in frames or holders for lamp shades or glasses."

le is divided into several parts or sections of a V form to fit round the holder, which consists of a e with radial arms provided with clips or ears which will retain and support the pieces of the ade in their proper places.

, 4*d.* No Drawings.]

A.D. 1868, March 24.—Nº 987.

, **John Stinson.**—(*Provisional protection only.*)—" Improvements in the apparatus for and in ns of communicating or transmitting signals between the parts of a railway train, and for signalling ays in connection with train working."

ig a horizontally vibrating frame or lever near to the inner edge of one of the rails of a railway, ; to the carriages of a train a striking bar or rod capable of being lowered so as to act upon the rame or lever for the purpose of signalling, and of being withdrawn when out of use. Also fitting s van or carriage with a pendant rod or bar for the purpose of being acted upon by the previous the position of the vibrating frame or lever and in its turn receiving and exhibiting the signal o be conveyed therethrough.

passenger or other person wishes to signal to the guard in the rear of the train the rod or bar is nd when it has performed its office it may be raised and secured until again required.

rating lever or frames may be placed at convenient distances apart along the line, and may be with point & signal working apparatus or be acted upon thereby or by hand.

, 4*d.* No Drawings.]

A.D. 1868, March 24.—Nº 988.

)N, **George Bertie.**—(*Letters Patent void for want of Final Specification.*)—" Improvements in r indexes."

ect of the invention is to allow consumers of gas to have a safe index easily read and not liable to of order.

ention consists in having three or more revolving dials with figures from 0 to 9 marked near the a thereof to denote (in the ordinary manner of gas indexes) the number of feet of gas that has ough the meter.

s in this invention are placed alternately before and behind each other so as to bring the centre of each dial closer together. The dials are worked by wheels so arranged as to cause the left dial once to every ten times the first dial, and so on in decimal proportion to all the dials; and in order to e dials being turned back an eccentric cam is fitted on one of the spindles and a lever with friction le to ride over it, and at every revolution of the cam the lever drops down in its place behind it its the wheels going back. The index is covered in front with a piece of glass blackened at the pting where it covers the top centre figure of each dial, such parts of the glass being left t as well as the part over two cyphers marked on the right of the other figures to make up the nt and denote the quantity of gas that has passed through the meter, and the whole of the figures ad off in one line, all the other figures on the dials being out of sight.

, 4*d.* No Drawings.]

A.D. 1868, March 24.—Nº 989.

S, **Herbert.**—(*Provisional protection only.*)—" Improvements in the construction of rails for and tramways."

s of the rails are respectively formed with a step or steps arranged in an oblique line so that when re placed end to end for the purposes of connection the steps fit into or overlap each other, or arranging the steps in a simple oblique line one end of the rails may be formed of a > shape, or steps formed thereon, the other end being recessed with a corresponding step or steps, so that ds when brought together will fit into and coincide with each other.

1, 4*d.* No Drawings.]

A.D. 1868, March 24.—Nº 990.

William Edward.—(*A communication from Ernest Henry.*)—" An improved smoke consuming e or furnace."

oke consuming fireplace is based on the well known principle of passing the products of combustion ck coal through a layer of red or live coal.

replace is fed in the ordinary manner, that is to say, black coal on red, but the direction of the is reversed so that the smoke produced by the black coal drawn from the top towards the bottom may pass through the incandescent layer. This reversal of draught is obtained by putting the lower part of the fireplace in communication with the chimney, and taking care that the layer of live coal always rises somewhat higher than the opening leading to the chimney.

Smoke consuming fire boxes for locomotives only differ from ordinary fireplaces in being provided with a transverse partition which retains the fuel, while leaving at its lower part the opening necessary to the disengagement of the gas. This partition is composed of two parts, of which one forms a boiler tube and is in contact with the live coal, the other a shifting sheet iron plate.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 24.—N° 991.

BOOTHBY, William Robinson. — (*Provisional protection only.*) — "An improved combination of "mechanism to produce rotatory motion in engines."

From a point on the surface of a cylinder grooves are cut at an equal or nearly equal pitch to the circumference, the length being equal to half the pitch, the ends of the grooves being rounded off as they intersect each other. Through the cylinder a shaft is fixed free to revolve in thrust blocks at each end of the cylinder. At an angle 90° with each other, parallel to cylinder & shaft, two steel faced planed slides are placed within, which slides are sliding blocks with axles through them pointing thro' the grooves towards centre of shaft, the blocks having steel rollers on them to work in the grooves. Opposite the ends of the slides are placed cylinders with the ends of their piston rods firmly fixed into the sliding blocks, the one halfway down, the other at either end of the groove and slide. Steam is admitted to act on either side of piston by means of a smaller cylinder (grooves being placed on the end of the shaft nearest the cylinders) and friction rollers working in the grooves attached to the ends of levers connected with the valve spindles. The smaller screw is free to revolve on the shaft through half a revolution, which reverses the motion of the engine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 24.—N° 992.

FULLER, Thomas William.—"Improvements in carriages."

This invention consists in constructing omnibusses and other carriages so that ladies or other persons may ascend to the roof seats from the interior of the carriage. In the front of the carriage is a series of steps partly made in the boot and partly in the body. The front end of the carriage has a door which when opened in the interior of the carriage permits a lady or other person to ascend by the steps described to the roof seats. Over the door is a hinged flap, which constitutes when shut down the roof seat. The top step is formed by turning back the top of the boot, and the bottom step forms the end seat in the carriage. When the door is closed, and the flat and top of the boot are turned down, the carriage resembles both externally and internally an ordinary carriage.

[Printed, 10*d*. Drawings.]

A.D. 1868, March 24.—N° 993.

ABEL, Charles Denton. — (*A communication from Clement Exhenry.*) —(*Provisional protection only.*)— "Improvements in watches, chronometers, and clocks."

This invention consists in substituting for the ordinary spring barrel two strong springs without barrels situated in recesses in the pallet plate, which springs are fixed at their outer ends and are connected by their inner ends to two spindles that impart their motion by means of spring pawls and ratchet wheels to two toothed wheels in gear with each other, one of which actuates the minute wheels and escapement of the watch or clock.

For the stop action, the spindles carry studs in gear with star wheels so formed as to stop their rotation after the springs have been wound up sufficiently.

By this invention the watches, chronometers, or clocks are made to go 18 or 20 days without winding.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 24.—N° 994.

GRAY, Edward.—"Improvements in the manufacture of metal bars intended to be made into horse shoes "and other articles."

This invention consists in rolling bars of iron or of steel alone or of iron faced with steel, with a number of teeth or serrations made longitudinally, transversely, or otherwise, on one or more of the surfaces of such bars, of whatever section they may be, the object being to obtain a bar suitable for the manufacture therefrom of horse shoes or other articles in which a roughened or dentated surface is advantageous. Horse

· example, made from such bars will not only be more durable, but will present a firmer foothold, 10t require sharpening or roughening in frosty weather, as the teeth or sharp points rolled in the ar will prevent all tendancy to slipping.

d, 6d. Drawing.]

A.D. 1868, March 24.—N° 995.

DWARD.—"An improved mode or method of strengthening or increasing the durability of rails, and crossings for railways."

vention consists in making rails, points, crossings, and chairs for railways, also tyres, axles, and parts of locomotive engines of iron and steel combined, the steel being placed in or on so as to lly or partially the actual wearing or rubbing parts of each article, whereby I obtain increased at a comparatively slight additional cost.

d, 8d. Drawing.]

A.D. 1868, March 24.—N° 996.

ASTLE, Robert Anthony.—(*Provisional protection only.*)—" Improvements in the manufacture and steel, and in apparatus employed therein."

vention relates partly to the manufacture of iron and steel by blowing air or steam through or into n metal contained in a suitable vessel, "converter," or furnace; and consists in the employment of ore injectors constructed somewhat after the same principle as the instrument known as "Giffard's

The said injector or injectors is or are in connection with a vessel or vessels containing powdered ar substances or agents, which when blown into the molten metal through the injector and blast tend to improve the quality of the iron or steel.

ropose to use one or more injectors or apparatus of like principle as above in connection with the s of blast or other furnaces, for the purpose of injecting small coals or small coke or other materials urnace in order to economise the working and improve the yield of such furnaces.

arrangement the injector may receive the blast from the ordinary blast pipe, but may inject the into the furnace by a separate tuyere.

ropose to use the injector or apparatus of a like nature as above for forcing either powdered or ents by means of a jet or jets of air or steam into any description of furnace or converter.

ents which I propose to introduce in the manner above described may consist of mixtures of ground charcoal or other substances possessing similar properties, in conjunction or not with oxide of manga- hese may be all used together or separately, and chloride of sodium, alumina, and nitrate of soda, or em, may be added as required.

propose to employ sawdust as a means of preserving the substances to be injected in a granular , such substances being mixed with the sawdust before being introduced into the vessel or receptacle tion with the injector. I use sawdust also as a vehicle for the injection of acids or alkalis into the or furnace.

d, 4d. No Drawings.]

A.D. 1868, March 24.—N° 997.

, John Alcock, and HUNTLEY, Benjamin Ralph.—(*Provisional protection only.*)—" Im- ents in ships' hatches and in ventilating the holds and cabins of ships."

velty of this invention consists in the hatches of ships being made of iron, steel, or other metal r tight, so as to do away with tarpauling, battens, &c., and in having a man hole inserted in one or the hatches so as to ventilate the hold, and also as a means of entering the hold for the purpose of or shifting the cargo or discharging the same without taking off the hatches. Also to be used as of ingress and egress to the bunkers from the deck.

d, 4d. No Drawings.]

A.D. 1868, March 24.—N° 998.

, Frederick William.—(*Provisional protection only.*)—" Improvements in turbine apparatus aining power from a fall of water."

ing to this Provisional Specification a parallel flow turbine is suspended by annular grooves and ned on its axis and received into a bearing; below this bearing and close up to the wheel is another ormed with hard wood packing strips.

d, 4d. No Drawings.]

A.D. 1868, March 24.—N° 999.

LEWIS, David.—(*Provisional protection only.*)—" Improvements in portable tables."

This invention consists in forming the tops of portable tables of thin narrow strips or laths of w other material glued or cemented superficially to a flexible back, so as to roll up and admit of bei upon the knees or screwed to a pole or stand having metallic ribs for securing the said top in like to an umbrella.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 24.—N° 1000.

SMITH, Robert.—" Improvements in machinery for winding cotton, silk, and other yarns or thr " to spools, cards, or balls, and in additional apparatus to be used when winding balls for ticket " same."

These improvements apply to the self acting machines for winding cotton, silk, or other thread same time, and have for their object the obtaining of a better tension and preventing any threa unwound.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, March 24.—N° 1001.

HARRIS, Charles.—(*Provisional protection only.*)—" Certain improvements in machinery or a " to be employed in the manufacture of paper bags."

The novelty of the invention consists, first, in forming from one continuous sheet or roll of p means of drawing rollers, creasers, and folders, a continuous tube that is cut or severed into given during the stoppages caused by the intermittent motion of the drawing rollers; these lengths are next acted upon by means of sliding bars that fold or crease in their bottom ends, after whi undergo the operation of being formed into bags. This is effected by the second part of my i ments, the novelty of which consists in placing the previously formed tubes in a longitudinal s after the other, where they are progressively carried along by means of endless strap and chain, durin time they pass underneath a paste roller which is so constructed that paste can be supplied by the any part or portion of the surface of the tube passing beneath it. After the tube leaves the pas creased, turned over, and caused to pass between two rollers, from whence it is passed between cale rollers and delivered from the machine in the form of a square bottomed bag.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 24.—N° 1002.

ANTILL, Joshua.—" Improvements in stench traps."

I cast or fix two diaphragms one above the other in the trap of curved or other form. Th diaphragm inclines downwards to about mid-depth of the trap, sufficient space being left between and the diaphragm for water to pass. The lower diaphragm is fixed near the bottom of the trap a up behind the upper diaphragm so as to form a chamber in which sufficient water always remains to any effluvia arising from the drains, while a free passage is afforded behind the lower diaphragm water to pass away. Access is had to the trap by means of a grating at top as usual.

[Printed, 10*d*. Drawings.]

A.D. 1868, March 24.—N° 1003.

NEWTON, Alfred Vincent.—(*A communication from Robert Wade.*)—(*Provisional protection* —" Improvements in the construction of pocket knives."

The invention relates to forming pocket knife handles with closed backs and fitting the springs handles without rivets or other attachments.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 24.—N° 1004.

SMITH, Richard, junior.—" Improved apparatus or machinery for scouring and hulling gra " seeds."

This invention consists in in the adaptation of bars or rods of iron or other suitable material in the of the wire or openwork cylinders or cases in which brushes set on radial arms or other frames w object being to form a series of projections in the inner surface of the cylinder or case, so as to prev grain or seeds being carried round the comparatively smooth surface of the cylinder or case.

[Printed, 1*s*. Drawings.]

A.D. 1868, March 24.—N° 1005.

BOULTON, Matthew Piers Watt, and IMRAY, John.—"Improvements in means and apparatus "for effecting aerial locomotion."

Structure and operation of wings for supporting and propelling aerial vessels; direct acting apparatus for working them; generation of the power from combustible fluids and cooling of the parts heated by combustion; application of the power to aerial vessels actuated in other ways, and mechanism for starting, steering, and trimming aerial vessels.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 25.—N° 1006.

LITTLE, Robert.—(*A communication from Dugald Little.*)—(*Provisional protection only.*)—"Improvements in reducing the temperature of air, in producing ice, in preserving animal and vegetable substances, "and in apparatus therefor."

The invention consists, firstly, in cooling air by submitting it in a compressed state to cold or cooled water in apparatus constructed like any suitable kind of surface condenser, such as is in use with steam engines; secondly, in employing the cooled compressed air to maintain as low an atmospheric temperature as may be required in a room, ship's hold, or other closed vessel or receiver, by admitting it and letting it expand therein; and, thirdly, in freezing and thereby preserving animal and vegetable substances by placing them in such room, ship's hold, or other closed vessel or receiver, cooled to the requisite low temperature by the expansion therein of cooled compressed air.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1007.

ELLIOTT, Arthur, and BARKER, John.—"Improvements in apparatus for lubricating axles and "bearings and other frictional surfaces."

Our invention consists in supplying oil to the axle or other article to be lubricated by a cork or other roller floating in the oil or other lubricating material.

This roller is turned round as the axle revolves or the slide moves to and fro and applies the oil to the under surface to be lubricated.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 25.—N° 1008.

BONNEVILLE, Henri Adrien.—(*A communication from Charles Cardot and Stanislas Louis Alexandre Berthier.*)—(*Provisional protection only.*)—"Improvements in apparatus for exhibiting advertisements, and "in apparatus for distributing prospectuses, cards, circulars, and other papers."

This invention relates to a new and improved apparatus distributing automatically prospectuses, cards, circulars, or such like analogous papers, in combination with another apparatus reproducing, in the shape of bills or placards, the subject-matter or abridgment of the said prospectuses, cards, or circulars.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1009.

McGLASHAN, Alexander, and HENDRY, John.—"Improved machinery or apparatus for mashing "substances employed in the making of fermented liquors."

A cylindrical casing placed horizontally, provided with inlet and outlet for material to be mashed, and having its upper part made in the form of a hollow lid hinged to the under portion; the outer side of the lid is provided with an opening for the admission of water or liquor, and its interior or concave side perforated with holes. Within the casing is a perforated hollow shaft supported and rotating in bearings. Around this shaft are arranged a helical blade and a series of hollow twisted blade-like arms having slots formed therein. The material to be operated upon is carried along the casing by the action of the helical blade or screw until it comes in contact with the arms, by which it is thoroughly mashed, water or liquor of the requisite temperature being simultaneously admitted to the material under treatment, through the perforations before mentioned.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 25.—N° 1010.

WOLLASTON, Alfred Buchanan, and STANBRIDGE, Frederick.—"Improvements in the "treatment of mixed fabrics and in the separation of wool from cotton and other substances contained "therein."

The rags or materials are boiled in a mixture of sulphuric acid and water, to which is added rock salt or common salt, a small quantity of nitric acid being combined therewith if desired. During the process of boiling a piece of iron is immersed in the mixture, or the same may be kept therein during the whole process. The result of this treatment is that the cotton or other vegetable substance or substances is or are completely separated from the wool or animal fibre.

The novelty of this invention consists in employing the before mentioned process as and for the purposes mentioned.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1011.

WARBURTON, James, junior.—" Improvements in steam engines."

This invention relates to that class of steam engines known as " rotary engines," and the improvements consist in the construction and employment of a circular cylinder or a segment thereof having a slit or slot on its inner periphery. Also a piston of suitable form to fit the cylinder fixed on the periphery of a circular plate, which having a central boss is mounted on a rotary shaft supported in bearings concentrically within the circular cylinder so that the piston when revolving will pass through the cylinder, the plate of the piston fitting steam tight in the slit or slot of the said cylinder by means of suitable packings. A slide diaphragm is introduced into the cylinder which is worked in and out across the same by a cam or cams fixed on the piston shaft and which may be aided by springs. This cylinder is constructed in two parts turned true and bolted together and fixed on a bed plate, is provided with steam and exhaust ports, or when a segment of a cylinder is used the ends are open. A valve is introduced into the steam pipe or inlet for regulating the admission of and cutting off steam, which is operated by a lever from a cam or tappet fixed on the piston shaft, such cam being suitably formed or capable of adjustment to admit steam at the proper time, and cut off at any desirable part of the stroke.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 25.—N° 1012.

HAYHURST, George.—(*Provisional protection only*.)—" Improvements in drying cylinders employed in " sizing and other machines."

A quantity of tubing is placed close to the inner periphery of the cylinders, having one or more ends in connection with the steam supply pipe, and the other end or ends communicating with the eduction or discharge pipe.

The tubing may revolve with the cylinder or be stationary.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1013.

BUCK, William.—" Improvements in machinery or apparatus for working and locking or controlling " railway points and signals."

This invention has reference, *firstly*, to the use of certain compensating levers in conjunction with an additional wire for the purpose of counteracting any variation in the length of the working wire of signals.

Secondly, to the use of an arrangement of horizontal locking shafts which are caused to rock in their bearings and to lock and unlock the point and signal levers by the aid of lateral arms or projections in such shafts.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, March 25.—N° 1014.

LANE, Thomas.—" Improvements in looms for weaving."

This invention has reference to looms in which the shuttle is propelled by a blast of air produced by a single stroke of a piston in a cylinder, as described in the Specification of a Patent granted to Henry Lea on the 17th February 1866, No. 509.

The invention consists, firstly, in mounting the cylinder and piston on a lever so as to be capable of meeting the backward beat of the lathe, the piston receiving from the lathe the blow necessary to produce the required blast of air. The blow is struck by a pipe at the back of the lathe, through which the compressed air is conducted. The return motion of the piston is produced by a strap connecting it with the lathe.

Secondly, a swell similar to that used in the ordinary picker loom is employed, the pressure of which on the shuttle at the moment of picking is relieved by connecting it with the crank of the lathe.

Thirdly, the shuttle is brought to rest by a check strap, a buffer being employed at the back of each shuttle box. These buffers are connected by a cord of such length that when the shuttle has entered one box and pushed the buffer home it draws the other buffer forward an equal distance to receive the shuttle at the next pick.

The cords work in tubes to prevent leakage, and their ends are connected by a strap which permits of adjustment.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 25.—N° 1015.

BROOMAN, CLINTON EDGCUMBE.—(*A communication from the Society Paul Corpet and Lessieux.*)—"Improvements in machinery for the manufacture of paper tubes especially intended for use in spinning "machinery."

A strip of paper is pasted, moved forward intermittently, cut transversely into lengths, each length is then cut lengthwise, and the two pieces are then rolled round two spindles, one at each side, whereby two tubes are formed at a time. The main features of the machine are, 1, a wheel with helicoidal teeth, having dead points or stops to give reciprocating motion to a carriage, which carries a presser or gripper for pressing the lengths of paper. 2, means of printing trade or other marks on the paper by parallel rollers, between which it passes. 3, the mode and arrangement for cutting the paper transversely and then lengthwise. 4, a mode and arrangement for pushing the finished tubes from the spindles and guiding them into a receptacle below.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 25.—N° 1016.

FISHER, SAMUEL.—"Improvements in the ornamentation of tiles to be used for the purposes of mural "and other decoration."

I produce designs, patterns, or letters on unglazed tiles, which I apply for the purposes of mural and panel decoration for large or small surfaces on the exterior or interior of buildings and otherwise.

I first soak the unglazed tile or size it in order to prevent the colors becoming absorbed too rapidly, and then trace the design thereon in some dark color, and fix it by rendering the tile red hot.

I then size or wet the tile again and fill in the outlines of the pattern or design with colors such as are used for painting on china, after which the tile is fired a more or less number of times for fixing the colors.

I further propose to make designs in parts on separate tiles combining a number to form a subject; in this manner a cheap means is afforded for decorating large surfaces.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 25.—N° 1017.

PLANT, JAMES.—(*Provisional protection only.*)—"Improvements in dram flasks."

Dram flasks usually have a screw cap taking on to a screw collar fixed by a cement of a corrosive nature to the neck of the flask, the rim of the screw collar fitting on the top of said neck. In this manner the liquid or spirit contained is constantly brought in contact with the metal, producing its corrosion and destroying the cement, as well as spoiling the contents of the flask.

According to my improvements I slightly lengthen the neck of the flask and fit the screw collar outside the same without any rim at top, the neck projecting upwards above the collar, whereby the liquid may be entirely preserved from contact with the metal in pouring and otherwise.

I prefer to make the glass neck slightly convex on the interior to facilitate pouring.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 25.—N° 1018.

NEWTON, ALFRED VINCENT.—(*A communication from Henry Tatem Potter and Joseph Griswold Lamb.*)—"Improvements in spinning machinery."

To secure uniformity of tension of the yarn in spinning apparatus working on the principle of ring travellers, a travelling transverse rocking guide bar is used.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 25.—N° 1019.

RICHARDSON, WILLIAM.—"Improvements in machines for burring or cleaning wool."

This invention consists in exhausting air from the interior of the comb cylinder for the purpose of causing the material to be drawn thereon.

[Printed, 10*d.* Drawing.]

A.D. 1868, March 25.—N° 1020.

WHITEHOUSE, Thomas.—(*Provisional protection only.*)—" Improvements in blast furnaces."

This invention has for its object the better regulation of the force of the blast through the tuyeres of blast furnaces.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1021.

SAGAR, Thomas, RICHMOND, Thomas, and CATLOW, Christopher.—(*Provisional protection only.*) —" Improvements in looms for weaving."

This invention relates to the " letting off " of yarn from the beam by means of an arm on the vibrator carrying a lever or catch on which are detents entering the ratchet wheel, and in the manufacture of the tumbler balls and nose bits of chilled iron, also the dispensing with the tension roller by means of a link from the cloth beam shaft connected with a lever and weight or spring.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1022.

ANDERSON, John. — " Improvements in machinery employed for carding wool, cotton, and other " fibres."

This invention relates to the use of an additional roller which I term a " stripping roller " for removing the fibre which adheres to the cylinder of carding engines, and a comb for clearing the stripping roller, the said stripping roller being removable in its bearing so as to act as above described or to act as an ordinary clearing roller.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 25.—N° 1023.

JAMESON, John.—" Improvements in the preparation of safety paper."

According to this Provisional Specification a design is printed upon paper of such a character that by the use of chemical inks the design shall either be changed in color or obliterated, or being invisible shall be rendered visible at the parts written upon.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1024.

MEADE, Herbert George Phillip.—(*Provisional protection only.*)—" Improvements in fire-arms and " in cartridges, projectiles, and torpedoes."

This Provisional Specification describes guns and projectiles so constructed that a portion of the projectile may surround or be exterior to a portion of the gun.

It also describes arrangements for arranging the combustion of cartridges.

It also describes torpedoes capable of travelling through the water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 25.—N° 1025.

PRICE, Astley Paston.—" Improvements in the treatment of ores, and in apparatus or means employed " therein."

These improvements relate to the use of what are known as regenerative heating furnaces in conjunction with furnaces suitable for the calcination and treatment of ores, compounds, or products for the purpose of obtaining highly heated air, vapours, or gases to be employed for the treatment of ores, compounds, or products in calcining furnaces or in similar furnaces or apparatus, so as to enable the said ores, compounds, or products to be subsequently subjected to metallurgical or chemical processes, in order that products useful in the arts may be advantageously obtained therefrom.

It is well known that in order to effect complete decomposition or to obtain perfect calcination it is sometimes advantageous that the operation should be conducted at a high temperature, and it is very desirable under such circumstances and conditions that the atmospheric air, vapours, or gases admitted for the purpose of oxidising or for the treatment or conversion of the ores, compounds, or products under treatment should be admitted and employed at an elevated temperature. Hitherto no economical or convenient method has been adopted for such purposes, and the object of this invention is to employ, in combination with calcining or similar furnaces, such as the ordinary calcining furnaces or with what are known as the Gerstenhofer furnaces or modifications thereof, an arrangement which may be similar to that employed for the heating of air, vapours, or gases, as described in the Specification of a Patent granted to C. W. Siemens, No. 1320, and dated 11th May 1857, or modifications thereof, or such an arrangement as is employed for the heating of the blast for iron furnaces, and described in the Specification of a Patent granted to Edward A. Cowper, No. 1404, dated 19th May 1857, or modifications thereof, or any other similar arrangement so as to obtain air, vapours, or gases at a hight temperature for the purposes of calcining, salting, chlorinating, or otherwise treating ores, compounds, or products in such before mentioned furnaces or modifications thereof.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 25.—Nº 1026.

PIGGOTT, William Peter. — " Improvements in transmitting electric telegraph messages, and in " apparatus employed therein."

This invention has reference to improvements upon the former Patents granted to William Peter Piggott, bearing date respectively the Third of December One thousand eight hundred and sixty, No. 2957, and the Twenty-eighth of August One thousand eight hundred and sixty-five, No. 2213; and consists, firstly, in connecting a number of batteries or "ganglions" to one end of a charged or induction cable, and connecting such batteries with the stops or "anvils" of the transmitting instrument, each stop representing a separate letter. Different tensions are thus obtained for different letters, and the needle of the receiving instrument is consequently caused to describe a greater or less arc accordingly. The corresponding letters are either indicated by the needle itself in the dial of the receiving instrument, or slits may be made in the dial and reflected rays of light passed through them on to a screen containing the letters, the particular letter required being shewn by the shadow of the needle. The second part of the invention consists in making one of the elements of the charged or induction cables described in the Specifications of the said Patents in the form of an outer tube or trough, which serves as a receptacle for the wire or wires of the opposite element.

[Printed, 1*s*. Drawing.]

A.D. 1868, March 26.—Nº 1027.

DIXON, Edwyn John Jeffery.—" Improvements in machinery for reducing, planing, smoothing, facing, " or otherwise working and manufacturing slate, slate slabs, and other stone and materials."

This invention consists in presenting the edges of cutting tools to the two principal surfaces of slate and other materials, so that they may be reduced, planed, smoothed, faced, or otherwise worked at the same time. The tools are fixed to brackets placed upon an iron bed-plate or other foundation, and the distances between the tools are regulated by screws, so that the material as it is presented to the tools in succession has its irregularities more and more reduced. The material is placed between two plates, which are fixed upon transverse slides, the latter being worked by means of screws actuated by mitre wheels, so as to advance or recede to or from each other. Behind this arrangement is the plate "pusher," which passes between the face plates, and is pressed forward by steam or other power against the slate or other material and drives the same into the series of cutting tools.

The novelty of this invention consists in the combination and arrangement of mechanism employed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 26.—Nº 1028.

KING, John Thomson.—" Improvements in apparatus for dressing millstones."

This consists essentially in the employment of a tool or drill tipped or fitted with a central cutting point of "hort" or other hard stone or substance, to which I give a rapid rotatory motion on its own axis and at the same time a to and fro movement over the stone to be dressed, so that without the said cutting point leaving the millstone grooves of any desired depth and width can be formed on the face thereof.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, March 26.—Nº 1029.

ORAM, William. — " Certain improvements in hydraulic presses and in the apparatus connected " therewith."

The novelty of the invention consists in the employment and use of an inner ram which is not stationary, but lifted by hydraulic pressure within the outer ram; a spring valve or tap is acted upon by the action of the ram to open a second inlet for water, and when the full pressure and height of the table is attained a handle is moved by self-acting means, which releases the spring and allows the water to return, and in its passage to act upon a valve and weighted lever which disconnects the clutch or driving connection and stop the hydraulic pumps.

Secondly, in the employment and use of weighted levers which are to be so applied to the valves of hydraulic pumps that such valves may be weighted so as to open and admit of the passage of water from the pipes supplying the cylinder, or from the return pipes at any required and arranged pressure.

Thirdly, in the employment and application of vertical plates or bars to the horizontal bars which are provided to strengthen the boxes, such vertical plates having **T** shaped openings into which the ends of the horizontal bars enter, and wherein they become locked by sliding the vertical plates in the direction of their length by means of a lever or levers attached thereto.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—N° 1030.

ORR, Matthew Brown.—(*A communication from Joseph Bancroft.*)—" Improvements in arrangements " and apparatus for drying and preserving animal and vegetable substances."

The invention consists in applying steam-heated plates in combination with currents of air, which may or may not be heated, to the drying of animal and vegetable substances, which substances in a subdivided or ground state if not naturally in small or thin pieces are placed on or in direct contact with such steam heated plates.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 26.—N° 1031.

SAINT AUBIN, William Henry.—(*Provisional protection only.*)—" Improvements in and additions to " cocks and taps for drawing off liquids and gases from pipes, casks, or other vessels, which improvements " and additions may also be applied to cocks and taps for filling vessels."

The object of this invention is to facilitate the connection of the cock or tap to or its withdrawal from the cask, vessel, or pipe from which liquid or gas is to be drawn or filled in.

On the pipe of the tap is a screw thread, and in the interior of the socket fixed in the cask, vessel, or pipe is a concave screw thread into which the screw thread on the pipe takes. Inside the socket is a hollow plug open at its front end, closed at its back end, and perforated with holes on its cylindrical sides.

The plug has a screw thread which takes into the concave thread in the socket. Before the pipe of the tap is introduced into the socket the plug described is within the socket, and no liquid can pass through its perforations to the tap. On screwing the pipe of the tap into the socket the plug is engaged with the said pipe, and the said plug is thereby caused to advance out of the socket into the cask, vessel, or pipe. Liquid or gas may now pass through the perforations in the plug to the tap.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 26.—N° 1032.

BETTNEY, Thomas.—" An improvement in paper cutting machines, which improvement is also applicable " to certain printing machines, envelope and label punching machines, and to other similar machines for " punching shapes."

These machines are usually worked by means of an ordinary crank motion which involves the inconvenience that the power applied must vary very much at different portions of the stroke of the cutter.

The object of the improvement is to render the power applied almost uniform throughout the stroke of the cutter. I accomplish this by using instead of the ordinary crank motion a crank driven by means of an eccentric pinion gearing into an elliptical wheel, the relative positions and diameters of the wheel and pinion being so arranged that when the crank is at that portion of its revolution in which it imparts the least motion to the cutter it shall be revolved at a quicker speed than when it has arrived at that portion of the revolution when the effect of its motion is greatest on the cutter. Another elliptical wheel or a sliding pinion may be used in place of the eccentric pinion.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—N° 1033.

DAVEY, Henry.—(*Provisional protection only.*)—" Improvements in steam engines, part of which is " applicable to steam pumps."

This invention consists, first, in improved means by which variable cut off is produced in expansive working engines by means of the governor.

The points of novelty are in the construction and arrangement of steam closing valves and of opening and releasing gear; secondly, in improved means of controlling the pistons of direct acting engines by means of water; and, thirdly, in the improved means by which the valves of direct acting engines are actuated.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, March 26.—Nº 1034.

LARK, William, junior, and CLARK, John. — "Improvements in locomotive engines, in part applicable to steam engines generally, and to railway and other carriages."

The novelty in this case consists, first, in constructing locomotive engines with vertical boilers, having fuel ibes in the lower portion, and hot air tubes in the upper portion.

Secondly. In fitting locomotive engines with extra wheels of lesser diameter than the regular driving heels, and causing the lesser driving wheels to run upon raised rails to increase the tractive power of uch engines.

Thirdly. In fitting cranked levers and clutch boxes to work along and grip the rail for the same urpose.

Fourthly. In corrugating the spring plates of the bearing springs longitudinally to lighten and strengthen he springs. Lastly. To improve the water gauge by fitting in the glass a hollow tube to rise and fall with he water and thus indicate the level more perfectly.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—Nº 1035.

HAVENHAND, Mark, and ALLEN, John.—"Improvements in pistons."

Angle pieces or wedges forced outwards by springs compensate for any wear through friction by expanding two half rings. The inclines of the wedges have tongues taking into grooves in the ends of the half rings. The sides of the pistons are thus kept steam tight against the cylinders.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—Nº 1036.

COCKS, James.—(*Provisional protection only.*)—"Improvements in the making of trowsers, and in the 'manufacture of materials for the same."

The invention relates to trowsers with borders, and consists in putting on the border independently after emoving it from the manufactured material; and the improvement in the manufacture of materials relates o dressed or faced goods, and consists in preventing the waste of the material that has ordinarily to be made on the material and afterwards torn off, by making the border thereon only on one side, to be fterwards removed and put on to the trowsers independently.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 26.—Nº 1037.

MANWARING, William.—"Improvements in the construction of reaping and mowing machines.

1. Ensuring the parallelism of the hinged finger beam.
2. Giving the draught chains of machines with an advanced finger beam a tendency to raise the finger beam and counteract the weight of the draught pole on the horses.
3. Providing for the discharge of dirt, &c., from under the sickle bar.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—Nº 1038.

CLIFF, William Dewhirst.—"Improvements in furnaces or kilns for the burning of bricks, pottery, "iron ore, and other similar substances."

This Provisional Specification describes the forming a furnace or kiln for burning bricks and similar substances of a straight flue or kiln open at both ends, the centre of the flue where the goods will be at a high heat being of less dimensions than the two ends. The goods to be burnt are passed through the flue on waggons which fit close to the side of the central part of the furnace. The ends of the flue or kiln may be partially or altogether closed by doors; at one end is a chimney to carry off the waste products, and the waggons enter the flue at this end. On each side of the flue are furnaces in which are produced gases which are taken through openings into the flue to be there burnt, or fires might be applied at the sides or other points of the flue.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—Nº 1039.

PAGE, William Samuel, and EAST, Richard.—"Improved mechanical arrangements applicable to "steam boilers and the cylinders of steam and other motive-power engines for preventing the priming "thereof, and for lubricating the pistons and cylinders of engines."

This invention consists, first, of certain improved mechanical arrangements applied within the steam chest of a boiler employed to generate steam, and is designed to prevent priming of the cylinders, which we propose to effect by causing the steam, more or less mixed with water, to circulate in a vessel formed with chambers communicating with each other by perforations made alternately at and around the top and bottom of the said chambers, by which the steam is separated from the water before it enters the steam pipe leading to the cylinder of a steam engine. Secondly, of an improved grease cup so constructed as to prevent the lubricating matter employed from being blown out of it, as is now commonly the case.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—N° 1040.

BROWNE, Benjamin.—(*A communication from William Nathan Throckmorton.*)—"Improved machinery "for the manufacture of collars, cuffs, and other articles of dress made of paper or paper and cloth "combined."

This invention consists of improved mechanical arrangements or appliances to be employed for the above mentioned purposes, and the principal features of novelty consist, first, in the use of intersecting knives for dividing or cutting the material; secondly, in the feed motion for advancing the material through the machine; and, thirdly, in the general combination of the entire mechanism for producing the articles in a finished state at one operation.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 26.—N° 1041.

PERRY, Stephen, and BRAMPTON, Frederick.—"Improvements in letter clips, bill files, and "other similar clips or suspenders."

The invention consists, firstly, in an improvement on the American wood letter clip. For this purpose, instead of forming the hinge of wire, hinges or connections are employed formed of plates of metal fixed rigidly to one half of the clip, whilst the other half of the clip is connected to each plate by a pin, and in some cases two or more springs are employed.

The invention relates, secondly, to improvements upon screw letter clips or suspenders, and consists in the employment of a loose washer, disc, or plate between the screw nut and the articles to be held, such loose disc, plate, or washer being connected to the other disc or plate by a link or other suitable means, and in some cases a ring or hook is connected to the clip. This part of the invention is also applicable to bill files, the disc carrying the screw being fixed to the millboard or other back.

Another part of the invention consists in the application of an adjustable hinge to letter clips, bill files, and other similar clips or suspenders, the two jaws of the clip, file, or suspender being forced together by a screw and nut.

The invention also consists in forming letter clips, bill files, and other clips or suspenders with a slot or opening in one jaw, whilst to the other jaw is fixed a screw or pin having a suitable head fixed thereto. The head of the screw or pin is capable when in one position of freely passing through the slot or opening, and then of being turned round so as to hold the two jaws firmly together.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 26.—N° 1042.

LYALL, James.—"Improvements in looms for weaving."

Upon the lay is a raceway, below the shed of yarns and above is a shuttle rail; the shuttle rolls through between the sheds below said rail, being moved continuously from side to side by a shuttle driver running on two rollers in the raceway below, and having two other rollers against the under side of the warps forming pairs of rollers moving together (by contact with each other, so that the upper rollers will not disturb the warps against which they roll) and partially behind the rollers of the shuttle to move that regularly and progressively.

The shuttle driver is moved by cords over pulleys reaching to a horizontal moving lever actuated by a cam, and the motion of the lever is multiplied by pulleys to increase the movement of the shuttle driver. The lay is moved by cams.

The other parts of the loom are of any usual character.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, March 26.—N° 1043.

JOHNSON, John Henry.—(*A communication from Robert Wallace Park, John Charles Love, and William Henry Love.*)—"Improvements in lamps for burning liquid hydrocarbons."

This invention relates more particularly to certain improvements in and modifications of the burners or

of lamps intended for the burning of paraffin and other liquid hydrocarbons whereby increased
y of flame is obtained; a better form or shape of flame is produced, which enables a plain cylindrical
to be used in lamps having flat wicks, and greater facility of access to the wick is afforded. Ac-
to the first part of this invention it is proposed to employ in the said burners a flat or nearly flat
late situate a little above the ordinary dome, and such dome being moreover surrounded at the
a pendent hollow cylinder or casing, an annular space being left between the said hollow cylinder
dome for the free passage of air which is to be directed on to the flame so as to increase considerably
iancy thereof, and making it longer and narrower so as to admit of the use of a cylindrical
.

econd part of this invention consists in combining with the dome of the burner two air tubes,
, or orifices arranged one at each end of the elongated slot in the dome so as to direct the air into a
hich will produce the same effect on the flame as that caused by the first part of this invention.
ird part of this invention consists in making the perforated casing of the burner in two parts, an
d a lower, and in providing one of such parts with elastic metal lips or tongues so adapted to
r part that when inserted therein the two parts will be held securely together whilst at the same
a slight effort the two parts may be readily separated.
upper part contains the dome, with the flat or nearly flat slotted plate, and the pendent cylindrical
r the air tubes or orifices at the ends of the slot, as the case may be, whilst the lower part contains
tube and elevator.
ed, 8*d*. Drawing.]

A.D. 1868, March 26.—N° 1044.

EDGE, Thomas, and **RICHARDSON**, William Henry. — (*Provisional protection only.*)—
rovements in bleaching esparto and other fibrous substances used in paper making."
improvements relate to an improved process for bleaching esparto and other fibrous substances for
nt use in the manufacture of paper.
rying out our invention, the fibre being first sorted, if necessary cut and boiled in an alkaline liquor
rdinary manner, is deprived of its coloring matter by washing with or without pressing, as well
o paper manufacturers; it is then placed in a rotatory cylindrical vessel with a quantity of bleaching
nd the vessel is closed and made steam tight. After being rotated or agitated, steam is admitted
contents of the vessel are heated to a boiling temperature or thereabouts, but a temperature as
00 degrees Fahrenheit may be used with advantage. By this means the whole of the chorine or
aching agent is rapidly brought into effect and exhausted while in contact with and acting on the
y the use of this process not more than two 3rds to one half the quantity of bleaching agent is
to produce the same degree or pitch of colour as that obtained in the ordinary manner, the time,
nd power employed being also materially reduced. When the process of bleaching is completed
e or exhausted bleaching agent is run off or the contents emptied into another vessel to drain, and
rial being then in the form of bleached paper stock is treated in the usual manner.
ce of a rotatory or a cylindrical vessel, a stationary vessel of any form may be used, and the limits
rature above mentioned may also be varied according to circumstances. When desirable, the
aterial, after being boiled, and previous to being introduced into the bleaching cylinder or other
ay be reduced into half stuff or stock.
d, 4*d*. No Drawings.]

A.D. 1868, March 27.—N° 1045.

R, Arthur.—"Improvements in the manufacture of cement."
vention has for its object the manufacture of improved cements by combining silicate of iron (which
rred to obtain from the slags produced in the manufacture of iron) or by combining the oxides of
on ores with sulphate of lime in suitable proportions (to which silica and clay may be added). In
impart hardness and durability for external use suitable proportions of soluble phosphates, acids, or
table chemical equivalents may be employed.
d, 4*d*. No Drawings.]

A.D. 1868, March 27.—N° 1046.

N, Stephen. — "Improvements in the construction and application of steam pumps, parts of
improvements are also applicable to other pumps, blast engines, exhausters, and other machines;
provements in hydraulic lifts and the mode of working the same."

The first feature of novelty is,—

The forming the pump and steam cylinders in one piece and causing the pistons to force water from one side whilst being acted upon by the steam on the other.

Secondly. The method of operating the slide valve without the necessity of rods, eccentrics, or stuffing boxes by means of water or an intermediate lever acted upon by the pistons.

3rdly. [*The novel construction of buffer valves, seats, and stops.*

*4thly.**] The novel method of con structing, arranging, and working hydraulic lifts and cranes.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 27.—N° 1047.

BATES, **Isaac**, and **TAYLOR**, **John**. — "An apparatus for cleaning the flues of boilers and boiler "seatings."

This invention consists of an apparatus by which the flues of boilers can be cleaned without stopping the boiler. The apparatus consists of one or more scrapers hinged to a rod passing through the flue; this rod can be worked to and fro in the flue and drawn out occasionally to remove the soot and cinders.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 27.—N° 1048.

SCOTT, **Adam**.—"An alcoholic fermented, dry, sweet or effervescent drink of which tea, or coffee or theine "or caffeine is an essential ingredient."

This invention consists in the application of tea or coffee of any origin or quality to the production by means of sugar, acid, and fermentation, of spirituous liquids of particular hygienic and restorative properties similar to wine, still and effervescent, natural or alcoholised, dry or sweet, colored or uncolored, or similar to beer, but differing from all ordinary beer or wine by containing theine, or caffeine as an essential ingredient.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 27.—N° 1049.

MAURICE, **Joseph**.—(*Provisional protection only*.)—"Improvements in the means or method of producing "optical illusions."

These improvements have for object the production of phantom images in motion or with life like movements on a stage, platform, or otherwise, whilst the means of producing such motion may be rendered invisible to the spectators. The inventor uses a transparent mirror or glass fitted or placed at an angle on a stage or platform, and combined with optical apparatus for illustrating or exhibiting the effects of persistence of vision, such, for instance, as those known as the phanakistiscope, sobroscope, zoetrope or wheel life. Instead of constructing these as usually constructed the inventor states they may be constructed as endless bands moving round rollers with vision openings in such bands; the figures to be exhibited being secured inside these bands, and this he considers may be used without other part of the invention.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 27.—N° 1050.

BAUMAN, **Frederik**.—"The preparation of a certain combination of chemical substances and its novel "application to the treatment of wood or other fibrous material in the preparation of paper pulp."

This invention consists in the preparation of a solution of lime and potash by dissolution in cold water and subsequent boiling, and in the introduction of a certain per-centage of the liquid thus obtained into the water in which the fibrous materials are boiled to separate the resin, silica, and other matters from the fibre.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 27.—N° 1051.

HODGKINSON, **George**.—"Improvements in the method of producing designs or patterns upon woven "fabrics."

The novelty of the invention consists in arranging and constructing the "cards" now employed to form the plain bottom cloth in such a manner as to produce a pattern or device thereupon in a similar manner to the "cards" regulating the weaving of the pattern in the upper cloth, or the two "sets" of cards may be so arranged that they will simultaneously produce two separate and distinct patterns.

[Printed, 4*d*. No Drawings.]

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* The words "The novel construction of buffer valves, seats, and stops. 4thly." are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

A.D. 1868, March 27.—Nº 1052.

:S, George.—(*A communication from Ferdinand Michel Ernest Nillus.*)—" Improvements in the
ruction, arrangement, and application of steam engines."
: improvements in the construction and arrangement of steam engines have particularly for their
› cause them to occupy less space, not to require any abutment other than the bed or sole plate on
hey rest, at the same time that they require very little foundation, notwithstanding the power which
given them ; and, lastly, to form a compact solid (though comparatively light) mass without complica-
nechanical organs, which latter occurs in a great number of systems, and more especially in the duplex
engines constructed on what is known as the " Wolff " system.
rincipal advantages of this present system are as follows :—
y, a single eccentric motion serves for both valves.
idly, there is a perfect equilibrium, because the organs of the two cylinders counterbalance each

lly, by the fact of this equilibrium the dead point becomes almost null.
thly, the steam passes directly from the top of the small cylinder into the bottom of the large one, and
rsâ, that is to say, from the bottom of the small cylinder to the top of the large one on the return
of the pistons; this arrangement renders useless the expensive and inefficacious employment of
ators, reheaters, and the like, and above all it avoids compression.
y, the space occupied by the engine is reduced to its simplest dimensions.
ly, owing to its simplicity and the reduction of the organs, the apparatus is lighter and less costly.
thly, and lastly, the economy of fuel must be greater with this system than with those hitherto known
nt of the advantages above mentioned.
ted, 1*s.* 4*d.* Drawings.]

A.D. 1868, March 27.—Nº 1053.

Patrick.—" Improvements in means and apparatus for shearing sheep and clipping horses and other
ls."
; revolving disc cutters with teeth and motions in opposite directions ; these teeth made with spring
like scissor teeth, and using the pressure of the wool or hair against the outsides of the teeth to assist
peration of cutting, as such pressure assists the revolving of the cutters.
imultaneous action of a number of scissor shaped teeth cutting in one direction.
imultaneous action of a number of oscillating scissor shaped teeth cutting in both directions.
ted, 8*d.* Drawing.]

A.D. 1868, March 27.—Nº 1054.

MAN, Clinton Edgcumbe.—(*A communication from Laurent Bovy.*)—(*Provisional protection only.*)
provements in breech-loading fire-arms."
invention consists in closing the breech by means of a vertical sliding block worked by the trigger
which in the same movement cocks the gun, raises the sliding block to allow of the insertion of a
e, and acts on an extractor.
ted, 4*d.* No Drawings.]

A.D. 1868, March 27.—Nº 1055.

, Charles Bartleet.—(*Provisional protection only.*)—" Improvements in securing and wrapping
edles."
nvention has reference to the securing of needles within the wrappers in such manner as to ensure
chment of each needle independently to the wrapper without sticking them through the wrapper or
r material.
ted, 4*d.* No Drawings.]

A.D. 1868, March 27.—Nº 1056.

ON, William Edward.—(*A communication from Claude Ferdinand Lacombe.*)—" Improvements in
es for obtaining motive power by means of steam, air, gases, or fluids."
hort cylinders with pistons connected together are placed one on each side of a cranked driving shaft,
ranks of which the pistons are made to bear, and thus force round the shaft, the cylinders themselves
g made to revolve round the shaft.
ed, 10*d.* Drawing.]

A.D. 1868, March 27.—N° 1057.

JONES, Henry, junior, and **DE LA RUE**, William Frederick.—" Improvements in whist counters."

According to this Provisional Specification a tablet constructed of cardboard or other material is used. It is made double, and between its two thicknesses are concealed the counters, which each have a stud upon them projecting through a slotted hole in the upper surface of the tablet. Any of these counters are made to project beyond the edge of the tablet by pushing their studs along the slotted holes. Or the upper surface of the tablet may be perforated, and the counters being moved by their studs are seen through these perforations.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 27.—N° 1058.

JONES, James Grafton.—" Improvements in apparatus for hauling minerals in mines, and for raising " water from mines and other places."

According to this Provisional Specification minerals are hauled along the underground roads of mines by winding engines placed at the ends of these underground roads. The engines are worked by compressed air brought down by pipes from the mouth of the pit. The Specification also describes working the pumps which raise the water by means of engines at the bottom of the mine worked by compressed air or water brought down by pipes from the mouth of the pit.

Also a method of lessening the concussion of the valves of pumps.

Also an endless chain for propelling the trucks a short distance and then releasing them.

Also a machine for compressing air.

[Printed, 2*s*. 10*d*. Drawings.]

A.D. 1868, March 27.—N° 1059.

HUGHES, Walter Watson.—" Improvements in apparatus for propelling and steering vessels, and in " forcing water."

This Provisional Specification describes a cylinder divided into two compartments of different dimensions. The smaller compartment has a piston in it worked by steam. The larger cylinder has two pistons working in it at fixed distances apart. Water is admitted from the stern of the vessel by a passage to the larger cylinder.

Propelling vessels and pumping water by centrifugal apparatus is also described.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, March 27.—N° 1060.

LISTER, Samuel Cunliffe.—(*Provisional protection only.*)—" Improvements in the manufacture of cut " pile fabrics."

The improvements described in this Provisional Specification are applicable chiefly when weaving two pile fabrics face to face and then severing the pile which connects the fabrics.

The improvements consist, first, in using a positive let off motion for letting off the pile warp, and in combination therewith a reciprocating straight knife for severing the pile, the knife being about the breadth of the piece to be cut; the knife is put out of action when the slay beats up; the knife is made in two or more parts connected together end to end.

Second. Weaving such fabrics face to face in the grey, that is, with undyed yarn, and afterwards printing such pile fabrics; also modes of finishing the same.

Third. In printing the warps of such fabrics before they are woven face to face.

Fourth. A mode of finishing the back of velvets thus woven.

Fifth. Wefting velvets with yarn made from a mixture of wool or hair and silk.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 27.—N° 1061.

HUGHES, Henry, and **JONES**, Charles.—" Improvements in locks and keys."

In front of the bolt we place a series of sliders working in guides at right angles to the motion of the bolt and pressed down by springs.

A rectangular slot is made in each slider in different positions, and a projection on the bolt is caused to enter the slots, when they are made to coincide so as to draw back the bolt. A narrow slit is made in each slider to receive the key, which consists of a thin steelp late $\frac{1}{32}$nd of an inch only in thickness, having recesses or steps in one edge to correspond with the slots in the sliders.

In order to open the lock the sliders are first raised by turning the knob to bring all the keyhole slits pposite the one in the lock plate; the key is then inserted and the knob released, when the sliders immeiately fall into position in the key and bring the slots in a line so that the bolt may be drawn back. The liders are protected above by a drill proof plate. To prevent the bolt being forced back we mount an scillating catch taking into its top edge on pressure being brought to bear on the bottom slider, and so olding it in position.

Levers may also be substituted for the sliders with the same form of key as before.

A further improvement in keys consists in mounting them in a handle or case like a knife blade or pocket omb to facilitate carrying the thin key plates and other kinds in the pocket.

[Printed, 1*s.* Drawing.]

A.D. 1868, March 28.—N° 1062.

ILDES, John Guest.—(*Provisional protection only.*)—" An improved bearer or support for conveying ladles containing molten metal."

The novelty of the invention consists in mounting or supporting the "ladle" in a frame or hoop, from he back of which a pair of handles project, and the front of such frame is extended forwards in the form of short shaft which enters a bearing or bush in which it can turn or oscillate freely, the said bearing being ounted on the axle of a pair of wheels, legs or supports being placed beneath the frame at the handle nd, the whole forming a portable "barrow" wherein to move the molten metal from place to place.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 28.—N° 1063.

CURRIE, Thomas Charles.— (*Provisional protection only.*)—" An improved process for the preservation of milk."

I place the milk in a vessel enclosed in another containing water and boil it, adding about one fourth of a grain of magnesia to the gallon of milk. When sufficiently boiled the milk is to be placed in sealed cans which are then boiled in brine until the ends are bulged out by the expansion of the contents. The cans are then immediately plunged into cold water to complete the process. In this manner milk may be kept for any length of time in any climate.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 28.—N° 1064.

WARREN, Henry George, STUCKEY, Samuel, and FROUD, Philip.—" Improvements in revolving iron shutters."

The novelty consists in,—

Constructing revolving iron shutters of a series of hinged joints through which pass rods or pipes fitting in the holes of the said joints and rivetted or otherwise fastened at their extremities. The joints are kept in position by ferrules passing over the said rods or pipes and between the said joints. Studs are fixed in the outside line of joints which slide in a groove or grooves, thereby keeping the shutter in position.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 28.—N° 1065.

MACINTOSH, John, and BOGGETT, William.—" Improvements in boots and shoes."

Our invention consists in elastic inserting springs into the front of boots and shoes so that the springs shall not be exposed and be protected from abrasion.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 28.—N° 1066.

JOYNER, Charles.—(*Provisional protection only.*)—" Improvements in water slide gaseliers."

This invention consists firstly, in fixing a glass vessel at the top of the sliding tube of the gaselier, by means of which it can be seen when the slide wants water; and, secondly, in making flanges on the bottom of the fixed tube and on the top of the sliding tube. Should the sliding part of the gaselier descend by the breaking of the chain of the balance weight, it is prevented from falling off the fixed tube by the flanges described and a gas tight joint is formed at the same time.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 28.—N° 1067.

COOMBE, James Cane, and POOLE, John.—(*Provisional protection only.*) — " Improvements in " coating iron, steel, and such like surfaces, and protecting and preserving them from the corrosive action " of sea or salt water, and the oxidizing influences of damp air, wet, and moisture."

The novelty consists in coating iron, steel, and other like surfaces to be protected from oxidation or the galvanic action of mineral paints, with a solution of copal or resinous gum and spirits of wine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 28.—N° 1068.

ADDIS, William Judson.—" Improvements in the permanent way of railways."

The invention relates to improved arrangements and combinations of parts whereby the offices of sleepers and fish plates are combined, and those of spikes, trenails, and chairs are dispensed with.

For this purpose sleepers are employed formed of plates bolted or otherwise fastened together, such sleepers being of the sectional form of a triangle (or approaching thereto), the sides of which it is preferable to form hollow or concave. The rails (which may be either single or double headed) are fixed to the sleepers by means of bolts passing therethrough and through jaws formed at the junction of the plates, such jaws being of a suitable shape to embrace the sides or web of the rail. The sleepers it is preferred to form in lengths of three feet fixed at six feet distances from centre to centre, but this may be varied, and the sleepers are placed in pairs opposite each other, and tie rods or bars are employed passing through and fixed to opposite sleepers to maintain the gauge of way.

If desired, each angle of the sleepers may have a single or double headed rail fixed therein, thereby facilitating renewal of the line when one length of rail has been worn out or injured, as it is only necessary to turn the sleepers and thus bring up another rail, and then to fix the ends of adjoining rails in the sleepers. If desired, only one rail may be fixed in the sleepers.

The ends of adjoining rails meet in the centre of a sleeper, and are securely bolted therein, the sleepers thus combining the offices of sleepers, chairs, and fish plates.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 28.—N° 1069.

GEDGE, William Edward.—(*A communication from Victor Mollard.*)—" An improved apparatus for " moistening postage and other stamps to prepare them for application."

This invention consists in placing a sponge upon a spindle so that it may be turned at pleasure within a vase or vessel containing a certain quantity of water, and thus always present at the top a moistened surface upon which the stamp may be humected.

[Printed, 8*d*. Drawings.]

A.D. 1868, March 28.—N° 1070.

LAKE, William Robert.—(*A communication from Henry Torstrick.*)—" Improvements in filters."

The object of my invention is to utilize the bone dust that has hitherto been of no value for filtering purposes, either for saccharine solutions or other liquids; and this object is accomplished by mixing the bone dust with sand or anthracite coal or other similar substance or material that is insoluble in the liquid to be filtered and not liable to disintegration by its action, and which will hold the particles of bone dust apart and prevent their forming, either by themselves or with the mixing agent, a paste that is comparatively impervious to the solution or liquid it is desired to filter.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 30.—N° 1071.

ARMSTRONG, Henry.—(*Provisional protection only.*)—" Improvements in the manufacture of steel and " homogeneous iron."

The features of novelty consist in decarbonising the crude iron by means of oxygen being blown through it while in a molten state, then transferring the decarbonised iron in a cooled or molten state into a furnace on the Siemens' or any other principle or construction heated up to a high heat, to mix with as much crude carbonaceous or carboniferous iron as the hardness of the metallic substance to be produced may require, allowing a sufficient time for uniformity of construction to take place, then running into moulds as may be required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 30.—N° 1072.

ιOD, **Oliver.**—" Improvements in machinery or apparatus for washing, bleaching, dyeing, and ring hanks and cops of yarns and thread woven fabrics and other articles."

invention consists in placing the hanks, cops, and other articles on large wheels having revolving or ng motion imparted thereto.

shafts of the wheels run in bearings on the various cisterns containing the bleaching, dyeing, and equired liquors, and the wheel, with the articles, is caused to revolve or vibrate in the liquors.

ated, 10*d*. Drawing.]

A.D. 1868, March 30.—N° 1073.

S, **Carl Friedrich.**—(*Provisional protection only.*)—" Improvements in the manufacture of iron."

novelty in this case consists in grinding or pulverising the ores and other materials and mixing them r before smelting, in adding chemicals thereto for purifying purposes, and in purifying the waste rom the furnace by chemical treatment before using the same for heating purposes.

nted, 4*d*. No Drawings.]

A.D. 1868, March 30.—N° 1074.

S, **Carl Friedrich.**—(*Provisional protection only.*)—" Improvements in the manufacture of eable iron, and in the process of reheating the same for the purpose of rolling or hammering it."

novelty in this case consists in applying certain chemical fluxes during the process of puddling, ng, rolling, or hammering the iron, and in certain cases in granulating or dividing the crude or pig o small pieces or particles, and then mixing the fluxes therewith before heating or reheating the

ated, 4*d*. No Drawings.]

A.D. 1868, March 30.—N° 1075.

)RD, **Bertram.**—" Improvements in apparatus for communicating with deaf and dumb or deaf or b persons."

invention relates to a peculiar form of apparatus for facilitating intercourse with deaf and dumb or r dumb persons; and consists in the construction of a hollow case of any convenient form and mposed of wood or other suitable light material, and provided with a handle whereby it may be easily the hand of the user. On that side of the said case which is intended to face the user there are ed the letters of the alphabet, numerals, or other signs useful in personal intercourse; and upon the e side or that which faces the person communicated with there is provided an aperture, which may be ed by glass. In the interior of the hollow case are disposed a number of slides worked by buttons raverse along slots disposed each immediately above a different letter or sign. The upper end of each e slides carries the corresponding letter or sign to that marked on the case opposite to the particular , and when any slide or button is pushed along the slot corresponding letter or sign will be presented glazed aperture on the opposite side of the case.

uccessively raising and lowering or moving the slides it is obvious that words can be easily spelt and nication be thus established with the deaf and dumb or deaf or dumb without necessitating a dge of the signs known as "the deaf and dumb or finger alphabet.

nted, 8*d*. Drawing.]

A.D. 1868, March 30.—N° 1076.

SON, **John Henry.**—(*A communication from Francis Ellershausen.*)—(*Provisional protection only.*) provements in the manufacture of cast steel and malleable iron from cast iron, and in the apparatus eans employed therein."

invention relates to a mode or method of manufacturing cast steel and malleable iron direct from n, and to a peculiar construction and arrangement of apparatus to be employed for that purpose.

rding to this invention, a furnace of any convenient size and form provided with a blast pipe on the which furnace is placed a converter constructed of brick and cased in boiler plate internally for the strength. A circular cast iron flue conveys the flame and heat to the converter, the said flue being over the aperture of the furnace when required for use and removed again when not wanted. A flap false bottom is hinged to the bottom of the converter, and when this door is open the interior of the er is in immediate contact with the flame from the furnace which is carried up through the circular able flue. A lateral discharge aperture for the molten metal is formed at or near the bottom of the converter, and upon the top of the converter there is fitted by hinges or otherwise a cap or hood of a circular form at the base, and of the same internal diameter as that of the converter, but tapers towards the mouth, which is curved to one side and is in connection with a chimney shaft. In converting cast iron into cast steel by the aid of this apparatus, curled sheet iron is placed in the converter, which is open at the top, but is provided with a perforated bottom for the passage of the flame. The hood is then applied and connected with the chimney and the moveable flue adjusted in its place. Fire is then raised in the furnace beneath until the sheet iron curlings in the converter are brought to a white heat and so maintained till complete oxidation has taken place. The circular flue is then removed, the door or flap is closed against the bottom of the converter, and the top or hood is turned over. A sufficient quantity of molten cast iron is then poured into the converter to unite with the oxide of iron, the sheet iron curlings exposing a large surface of oxide of iron to contact with the cast iron, the particles of each uniting closely and causing rapid combustion throughout the mass which increases the temperature to such a degree as to cause the conversion to be completed whilst the metal is in a fluid state.

In lieu of sheet iron curlings other oxides may be used possessing the desired extent of surface; as, for example, spongy iron, as it comes from the puddling furnace. Before the cast iron is introduced into the converter, decarbonizing and purifying agents, such as oxide of manganese and the like, may be deposited in the interstices of the sheet iron curlings or their substitutes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 30.—N° 1077.

JOHNSON, **John Henry**.—(*A communication from Henry Hauer and William Howell.*)—" Improvements " in the treatment of cork, and in the manufacture of a new compound or material therefrom, applicable to " various useful purposes."

The first part of this invention consists of a novel mode of treating cork by charring or roasting it so that it may be deprived of the resinous and gummy matter with which the fibrous tissues are more or less impregnated, after which the cork is granulated or torn into small fragments, and in this condition it constitutes a new product which is available either alone or in conjunction with curled hair or other suitable stuffing material as a stuffing for cushions and for other useful purposes, but more especially for use in the construction of life preserving mattrasses on account of its increased buoyancy.

The charred chips may be fumigated or scented by burning in the fire to which they are exposed, myrrh leaves, cedar chips, or aromatic gums, or the cork may be subjected to heat in a closed box containing scent imparting substances.

The second part of this invention consists of a peculiar compound or material constituting also a new article of manufacture composed of the cork charred or roasted and granulated as above described, and caoutchouc or gutta percha kneaded or worked together so as to become nearly a homogeneous mass, the composition thus produced being available for the construction of light soles and heels for boots and shoes, for being moulded into different forms and objects for articles of utility and ornament, for being rolled into sheets and used for waterproof coverings, floor cloths, and other useful purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 30.—N° 1078.

JOHNSON, **John Henry**.—(*A communication from Francis Ellershausen.*)—" Improvements in the manu- " facture of cast steel and in furnaces to be employed therein, which furnaces are also applicable to the " remelting of metals generally."

This invention relates to the manufacture of cast steel from pig iron in conjunction with wrought iron or iron ore; also to the melting of blistered steel and other metals in large quantities, and in furnaces employed therein.

According to this invention the furnace is divided into two fire chambers separated by a fire bridge, the one chamber serving to contain the crucible which is surrounded by fuel, whilst the other chamber forms a reverberating fire chamber, the top being so curved or arched as either to direct the flame round the sides of the crucible in the adjoining chamber or down into the open mouth thereof as required. An opening is made in the roof immediately above the crucible to afford easy access thereto, and a lid or cover, as well as a discharge hole, are also provided for the crucible, which is of larger size than usual.

In using this furnace after both fires have been brought to a white heat, molten cast iron is poured into the crucible in such quantities as will form steel of the required quality in conjunction with malleable iron; vitrious fluxes are then introduced in order to protect the metal from oxidation. Wrought iron scraps are then brought to a white heat in an adjoining furnace, and introduced in suitable quantities into the cast iron already in the crucible. When the cast and wrought iron have been thus mixed and melted together in the crucible, the contents is drawn off as cast steel through the discharge pipe. This furnace may also be used for the smelting and refining of blistered or other steel, or for the remelting and refining of metals generally. The puddling process may also be carried on in the improved furnace by making the working hole on the top in lieu of on the side of the furnace, the puddling being effected by means of a ball of iron attached to the lower end of an iron bar which is worked up and down inside the crucible by a pulley and chain or by hand. Pulverised iron ore and purifying fluxes or agents with pulverised charcoal are added to the cast iron through the feed hole and worked up with the metal until it comes to "nature." The slag is then run off through the slag hole, and the required proportion of cast iron to form the required quality of steel is added. The cover of the crucible is either put on or vitrious flux added to prevent oxidation of the steel whilst the blast is increased in the fire chamber containing the crucible. The cast iron last added will carbonize the pasty material, and the whole will become liquid, and after allowing sufficient time for fusing the cast steel is ready for drawing off.

[Printed, 10*d.* Drawing.]

A.D. 1868, March 30.—N° 1079.

HADLAND, JAMES FRANCIS.—(*A communication from John Edson Sweet.*)—(*Provisional protection only.*)—" Improvements in metal ties for securing bales of cotton or other substance."

The nature of the said invention consists chiefly in constructing such ties (or the portion thereof which encircles the bale) of wire, also in the combination with suitable portions or lengths of wire of a peculiarly constructed coupling device. The said coupling device is formed with a hole in which one end of the wire is secured, and with another hole or with prongs or hooks for securing the other end of the wire. One end of the wire is connected to the eye of the coupling, while the other end of the wire after being arranged around the bale is passed through the hole or aperture at the other end of the coupling, and is bent and secured therein as the tie is drawn tight by the expansion of the bale.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 30.—N° 1080.

WIRTH, FRANCIS.—(*A communication from George Krauss.*)—" An improved mode of and apparatus for " stopping or retarding the progress of railway trains."

The purpose of this invention is to provide a strong brake for railway trains, and at the same time to economise the power which is lost by the working of the ordinary brakes. The medium through which this is done is the steam, and the purpose is attained chiefly by the change of the steam ports. In breaking the steam passes into the cylinder through the channels through which the steam is discharged if the engine is working, and vice versa, while the steam distributor stops in the direction of the train.

[Printed, 8*d.* Drawing.]

A.D. 1868, March 30.—N° 1081.

DAY, JOHN MARSH.—(*Provisional protection only.*)—" Improvements in decorticating seeds and oil nuts, " and in the machinery employed therein."

According to this invention a horizontal wheel of stone is set on a vertical shaft and turned by means of bevil toothed gearing actuated by treddle or by hand or steam power; the stone is supported by a table and standards, and is surmounted by an iron disc, the under surface of which is covered with an india rubber disc about an inch in thickness; these discs are kept in a fixed position nearly touching the surface of the stone; and the seeds or nuts being supplied by a hopper are decorticated by the friction of the stone and india rubber, which, by preference, should be vulcanized.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 30.—N° 1082.

WALKER, ANDREW BARCLAY.—" Improvements in the application of hot blast or heated air for evaporating " salt brine and other liquids, sugar, or chemicals; also for heating gas and oil retorts, raising steam in " boilers, boiling worts in breweries and distilleries; which improvements are also applicable for bleaching, " tanning, and baking; likewise improvements in apparatus used in some of the aforesaid applications."

The improvements consist in the application of hot blast or heated air by fan, pump, or cylinder for the purpose of boiling or evaporating fluids, bleaching, tanning, and baking.

The hot blast or heated air is obtained as described in my former Patent N° 2416, 1866.

In some cases I apply the hot blast through a series of tubes passing through the fluids, in other cases I surround the vessel containing the fluid with an outer casing, leaving a space between the two vessels; into the space I blow currents of heated air.

For bleaching, tanning, and baking, I blow currents of heated air into the chambers containing the goods to be bleached, tanned, or baked.

[Printed, 2*s*. Drawings.]

A.D. 1868, March 30.—N° 1083.

TYSON, Charles Shoemaker.—" Improved mechanism for taking up the recoil of heavy ordnance."

The features of novelty constituting this invention consist primarily of springs connected with the carriage of a cannon, and arranged to slide between surfaces inclining towards each other so as to be more and more compressed by their convergence as the carriage is forced back by the recoil of the gun and thus oppose a regularly increasing resistance thereto; and, secondarily, in a hinged coupling to connect the springs with the forward axle of the gun carriage, and a crank on said axle combined by an intermediate link with said coupling, whereby the springs are set against the inclined surfaces before the gun is fired, and subsequently released when compressed by its recoil.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 30.—N° 1084.

WALKER, James, and WHARRIE, John.—" Improvements in apparatus for the manufacture of cast " iron pipes and similar articles."

The first part of the invention consists in arranging screw or inclined blades in a hopper which is made to revolve round the core bar and to rise as the sand which is supplied to the hopper is compressed by the action of the blades. A short length of corebox or matrix arranged at the bottom of the hopper shapes the outside of the sand coating and rises with the hopper as the formation of the coating progresses.

In carrying out the second part of the invention the external mould is first made with its internal diameter the same at the bottom as elsewhere, and the faucet enlargement is afterwards made by a revolving cutter or sleeker.

The faucet part of the core is made separately from the rest of the core is made separately from the rest of the core, being rammed up by hand between an inner and outer ring, the latter of which is in two halves, so that it can be afterwards removed. The inner ring remains to support the core, having a turned flange fitting the bottom of the mould box, and being shaped so that the upper part of the core can be adjusted accurately upon it.

[Printed, 10*d*. Drawing.]

A.D. 1868, March 30.—N° 1085.

JORDAN, John.—" Improvements in the construction of fire bars for furnaces."

The principal feature of novelty in this invention consists in constructing fire bars with their upper surfaces forming a series of steps graduating downwards from the furnace doors towards the bridge, such steps being by preference shallower towards the furnace front and deeper towards the bridge. The vertical faces or " risers " of the steps are left open or perforated so that the air has a free access to the fuel, and the fire may be worked when necessary through these openings or perforations. The flat or horizontal faces of the steps may be either solid or perforated.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, March 31.—N° 1086.

AUSTIN, William.—" Improvements in the composition, boxes, and surfaces for obtaining instantaneous " light from chemically prepared matches intended to be ignited by friction."

The novelty in this case consists in mixing the friction-surface chemicals with japan or other varnish, resinous or oleagenous matter, and baking or stoning it on metal or other surfaces.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 31.—N° 1087.

TAYLOR, Frederick.—" Improvements in the fittings of railway carriages."

This Provisional Specification describes the fixing a rail on either side of the door of a railway carriage so as to prevent the risk of the hands of passengers being shut in when the door is closed.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 31.—N° 1088.

ALLEN, William.—(*Provisional protection only.*)—" Improvements in diminishing valves and steam traps " for steam pipes."

My improvements in diminishing valves consist in making them with a plunger and a valve with V shaped guides, also with a valve and a spring acting on the spindle instead of a plunger.

My improvements in steam traps consist in making the float with a taper plug fitting the end of the of pipe and the air valve with a weighted lever and spring.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 31.—N° 1089.

NCLAIR, JAMES.—" Improvements in screw propellers."

This invention consists in shaping each blade with a varying pitch or inclination, which increases from forward edge towards the middle and decreases from the middle to the after edge. This configuration nits of a greater average pitch and of a larger area than ordinary, being advantageously used; and it is ferred in carrying out the invention to adopt these increased proportions.

[Printed, 8*d*. Drawing.]

A.D. 1868, March 31.—N° 1090.

WTHORNTHWAITE, MILES, and ABBOTT, THOMAS.—" Improvements in taps, cocks, or valves or water, gas, steam, or other liquids."

The essential feature of this invention is the application of two circular discs or facings of metal, leather, od, steatite, ebonite, vulcanite, glass, bone, ivory, porcelain, earthenware, soapstone, gutta-percha, or other table material, having a corresponding curved slot hole in each for the waterway; one of the facings is ed or stationary, having a round hole in the centre, the other or movable facing has a square hole in the ntre to receive a spindle squared at the end which passes through a gland or stuffing box in the shell or dy of the tap and through the round hole in the stationary or fixed facing.

[Printed, 6*d*. Drawing.]

A.D. 1868, March 31.—N° 1091.

OODCOCK, HENRY BROOK.—(*Provisional protection only.*)—" A new manufacture of metal for axles, hafts, rails, tyres, and other purposes."

The invention relates to the manufacture of metal especially suited for axles, shafts, rails, tyres, and other rposes where hardness and malleability are required, and consists in the employment of steel bars with the n in the puddling furnace, such steel bars being cut into pieces of suitable lengths and added to the iron certain proportions according to the purpose and degree of hardness and malleability required. In the nufacture of this metal care must be taken that the pieces of steel are equally distributed or well mixed th the iron in the puddling furnace, so as to ensure the mass being as homogeneous as possible.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 31.—N° 1092.

ENT, JULIUS.—(*Provisional protection only.*)—" Improvements in electric telegraphs, and in apparatus connected therewith."

The most approved construction and arrangement of this improved express telegraph consists of three key oards to one apparatus in connection with a round disc of ivory the path of rotating spring contacts called he "sled." The ivory disc has one group of contact points and two groups of contact surfaces arranged in hree concentric circles, which groups are equal one to another, each filling up a third of a circle, and each group of contact points or surfaces corresponds with one key board.

The framework of the key mechanism consists of two vertical frames at each end connected together at the top and bottom by horizontal tie frames, and a table or slab at the top.

To each pair of vertical frames are bolted 9 stationary shafts, on which are hinged hangers carrying 49 small flat bars, which are grouped in 8 series containing 6 flat bars with a single bar below them.

To the said flat bars are fixed tappets formed of pins projecting on both sides, which tappets are fixed in the flat bars in certain positions in accordance with a prearranged diagram or plan representing different positions of dots corresponding with the different letters and marks on the keys of the key board. The ends of the bars on the right hand side are provided with insulating shoes of wood, to which thin steel wires are astened by screws.

To the bottom horizontal tie-frames of the framework are fixed 61 rods, each forming the axis of a wire rid composed of 12 vertical steel wires and 4 cross pieces, the 61 wire grids being parallel with each other when the apparatus is at rest, and each of the 8 series of flat bars pass through 6 corresponding interspaces of the wire grids and the single bar between one interspace. The upper tie frames of the framework carry 1 small shafts in 2 series alternating one above another, each shaft supporting a lever with two arms, one et of arms entering holes in the upper cross pieces of the corresponding wire grids, and the other arms earing into eyes in vertical key pins, which are placed in holes in horizontal plates at the top of the frame-ork and encircled by spiral springs.

The key board mechanism contains 61 keys, on which are letters, numbers, and marks corresponding with ppets acted upon by the said keys.

[Printed, 4*d*. No Drawings.]

A.D. 1868, March 31.—N° 1093.

RIVIÈRE, Louis Foy Amour Poniatowsky.—(*Provisional protection only.*)—" An improved " velocipede."

The axle of the front wheel is fixed to and rotates with the wheel itself. It is provided with cranks having balanced foot plates so that the rider gives motion to the machine through the cranked axle instead of pressing his feet against the ground as in the old arrangement.

Preferably the seat is supported by a spring, and the cross handle for steering communicates with a lever for actuating a brake.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 31.—N° 1094.

WESTON, John Henry.—(*Provisional protection only.*)—" Improvements in the means or apparatus " for lighting and ventilating the interior of buildings, combining a decorative effect."

I make an opening or openings in the ceiling of the building to be lighted and introduce a cone formed of latticework and ornamented to suit the design of the ceiling, which cone serves for ventilation and for the escape of the heated air. I suspend a gaselier from this cone consisting of a pendant pipe having horizontal tubes at bottom disposed around a centre, by preference, in the form of a floral or other pattern.

Horizontal jets are disposed at suitable points of the gaselier for lighting the apartment, while other horizontal jets are obtained by perforating the tubes at the side, serving to display the design of the gaselier.

Cut glass lenses or colored glass may also be mounted on the centre or among the tubes for increasing the effect, the perforations in this case being at top so as to form vertical jets to illuminate the lenses or colored glass.

[Printed, 4*d.* No Drawings.]

A.D. 1868, March 31.—N° 1095.

BESSEMER, Henry.—" Improvements in the manufacture of malleable iron and steel, in the heating and " melting of metals, and in the machinery or apparatus employed for such purposes."

According to this Provisional Specification decarbonized iron or other metal is melted by forcing through it air, together with gaseous or other fuel, so that the air and fuel may rise together through any of the metal that is already melted and burn therein, thus producing an intensely heated bath of molten metal which communicates the heat to the metal which remains to be fused.

[Printed, 1*s.* 4*d.* Drawing.]

A.D. 1868, March 31.—N° 1096.

JOHNSON, John Henry.—(*A communication from George Rehfuss.*)—" Improvements in sewing " machines."

This invention consists,—

Firstly, of a plate so secured to the frame of the machine that the looping arm hung to the said plate can be moved away from the scroll cam by which it is caused to vibrate.

Secondly, of a stop so arranged in respect to the above plate as to limit the forward movement of the looper arm.

Thirdly, of a rib and spring on the base plate of the machine for confining the looper arm.

Fourthly, of a shuttle carrier (either reciprocating or vibrating) constructed and arranged in respect to the shuttle so that in conjunction with a vertical plate secured to the frame of the machine it will maintain the said shuttle in its proper vertical, longitudinal, and lateral position.

Fifthly, in the combination of the vibrating shuttle carrier, a rod hinged to the frame of the machine, and a grooved disc on the main driving shaft, the whole being so arranged that when the said disc is moved forward so as to control the rod it will impart a vibrating motion to the carrier, and so that when moved back it will release the said rod and permit the carrier to fall.

Sixthly, in the combination of an arm and spring bolt for retaining and releasing a sleeve of the needle bar.

Seventhly, in the combination of a sewing machine shuttle with a spindle having a hole, or its equivalent, for guiding and giving tension to the thread.

Eighthly, of an arrangement for varying or adjusting the extent of projection of the feeding surface above the cloth plate according to the class of goods operated upon.

[Printed, 1*s.* Drawing.]

PATENT LAW AMENDMENT ACT, 1852.

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9. Specimina Ichnographica; or a brief nar several new inventions and experiments, larly the navigating a ship in a calm, JOHN ALLEN, M.D. (*Letters Patent, dated 7th August* 1729.) Price 8*d.*; by po
10. A description and draught of new Machine for carrying vessels or ships into any harbour, port, or river against tide, or in a calm, &c. By JONATHA (*Letters Patent, No.* 556, *dated 21st* 1736.) Price 8*d.*; by post, 9*d.*
11. An historical account of a new method fo ing the foul air out of ships, &c., with th tion and draught of the machines by w performed, &c. By SAMUEL SUTTON, the To which are annexed two relations give to the Royal Society by Dr. Mead and son. (*Letters Patent, No.* 602, *dated 1st* 1744.) Price 1*s.*; by post, 1*s.* 1*d.*

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15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.

DESCRIPTIVE INDEX
OF
PATENTS APPLIED FOR AND PATENTS GRANTED,

BEING

THE ABRIDGMENTS OF PROVISIONAL AND COMPLETE SPECIFICATIONS

For the Quarter ending 30th June 1868.

Printed and Published by Order of the Commissioners of Patents

UNDER THE

ACT of 15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.

BY BENNET WOODCROFT,

CLERK TO THE COMMISSIONERS OF PATENTS.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
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PUBLISHED AT THE OFFICE OF THE COMMISSIONERS
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SOUTHAMPTON BUILDINGS, HOLBORN.

1869.

[Price 1*s.* 8*d.*]

PREFACE.

PREVIOUS to the year 1867 the Abridgments of Specifications were published in classes only; and after the publication of the first volume of a class, bringing the Abridgments down to a particular date, considerable time necessarily elapsed before the appearance of the second part or continuation of the class. To obviate the inconvenience thus occasioned, the Commissioners of Patents made the following rule :—

PATENT LAW AMENDMENT ACT, 1852.
15 & 16 VICT. c. 83.

By the Right Honourable Frederic Lord Chelmsford Lord High Chancellor of Great Britain, the Right Honourable John Lord Romilly Master of the Rolls, Sir John Rolt Her Majesty's Attorney General, and John Burgess Karslake Esquire, Her Majesty's Solicitor General, being four of the Commissioners of Patents for Inventions under the said Act.

It is ordered as follows :—

After the 31st day of December 1866, every applicant for Letters Patent shall deliver at the Office of the Commissioners, with his provisional specification, or (when a complete specification is filed with the petition and declaration) with his complete specification, an abridgment, in duplicate, under his hand or the hand of his agent, of such provisional or complete specification. The abridgment must set forth the name of the applicant, the title of the invention, and describe, in as short a manner as possible, the features of novelty which constitute the invention. The abridgment and the copy thereof must be written upon sheets of foolscap paper, and upon one side only of each page, leaving a margin of one inch and a half on the left-hand side of the page.

(Signed) CHELMSFORD, C.
ROMILLY, M. R.
JOHN ROLT.
JOHN B. KARSLAKE.

Dated the 17th day of December 1866.

The Commissioners also directed that the Abridgments so delivered should be printed and published in the following manner, as explained in their Report to Parliament for the year 1866 :—

> "These abridgments will be printed and published in quarterly volumes after the expiration of "the six months' protection. Thus the abridgments delivered at the office in the quarter ending "31st March will be ready for printing in the quarter ending 30th September, and the volume will "be published in the ensuing quarter. The volumes will be of the same size as the chronological, "alphabetical, and subject-matter indexes (imperial 8vo.), and constitute in fact a fourth kind of "index, viz., a descriptive index in a chronological form. It is also intended to publish these "abridgments from time to time in classes, according to the plan which has been in operation from "the year 1856."

In this volume, to each Abridgment is prefixed the correct title of the invention, the name of the communicant, if the invention be communicated from abroad, and a notice if

Letters Patent have not been granted or are void for want of a Final Specification. the end of the Abridgment is appended the price of the printed copy of the Specificati with the word "Drawing," "Drawings," or "No Drawings," as the case may The Abridgment itself is printed exactly as furnished by the Applicant for Lett Patent; no attempt being made to correct errors in spelling or grammatical constructi or to supply words which have been omitted. It is deemed necessary to give t explanation, to account for the errors which are to be found in the printed Abridgme

B. WOODCROFT.

March, 1869.

WORKMEN'S CLUB INVERNESS

DESCRIPTIVE INDEX

OF

PATENTS APPLIED FOR AND PATENTS GRANTED,

BEING

THE ABRIDGMENTS OF PROVISIONAL AND COMPLETE SPECIFICATIONS

For the Quarter ending 30th June 1868.

A.D. 1868, April 1.—N° 1097.

COULDREY, Thomas, junior.—"Improvements in pumps for ships and other purposes, and in the "construction of buckets or valves for the same."

The novelty consists in constructing pumps with buckets and valves formed with two discs, one rigid and vertical and the other flexible and horizontal, united at their respective diameters. The flexible disc having two flanged plates fixed to its under side (one on each side of the lower portion of the vertical disc), and which forms the valve and also the piston of the pump when the rod is attached.

[Printed, 8d. Drawing.]

A.D. 1868, April 1.—N° 1098.

DOTY, Henry Harrison, and GRAVELEY, George.—"Improvements in the means or apparatus for "producing the more complete combustion of gas, paraffin, and other liquid hydrocarbons."

This invention consists in forcing a current of air into a circular flame of gas, or circular flame of paraffin oil, or circular flame of any or all the liquid hydro-carbons employed for illuminating purposes, at any desired point of the flame, above the place of its ignition, in order to secure the most complete consumption of carbon, and obtain the maximum strength or power of light from the material employed. It also consists in the construction of a burner and lamp (non-explosive) for burning paraffin and all other liquid hydrocarbons; also in supplying and maintaining fluid for the same at any desirable uniform height or level.

[Printed, 8d. Drawing.]

A.D. 1868, April 1.—N° 1099.

CATCHARD, Alfred.—"Improvements in the apparatus used in the manufacture of aerated bread."

According to this Provisional Specification motion is given to the cock for measuring out the dough from he mixing vessel by means of a driving band, or by other convenient means; motion is also given to an ndless band underneath the measuring cock, upon which the tins to receive the dough are placed. The earing for actuating the cock and endless band is so arranged that when the cock is open there is a tin nderneath it to receive the discharge of dough.

[Printed, 10d. Drawing.]

A.D. 1868, April 1.—N° 1100.

IER, Arthur McNutt, and WIER, Marshall Arthur.—(*Provisional protection only.*)—"Improvements in pneumatic apparatus employed in transmitting motive power for signalling and indicating or for other purposes."

Part of the improvements have for object the remedying of certain defects in signalling apparatus constructed with one compressing air vessel in the communicator, connected with several tubes leading to one or more indicators. They consist,—

First. In employing between the compressing air vessel and the tubes a valve box of peculiar construction, containing a series of valves corresponding to the number of signal tubes. Communication is opened or closed at pleasure by means of the said valves, between any one or more of the tubes & the compressing air vessel, and when the former are by them closed to the air vessel they are opened to the external atmospheric air.

Second. In employing a relief valve on the compressing air-vessel, by which a deficiency of air therein occasioned by suddenly closing the communication between it & the tubes is obviated by allowing the atmospheric air to enter through the valve to make up the deficiency.

Third. In effecting by one movement on the part of the operator the same result as has heretofore required two seperate movements, namely, the opening or closing of the tubes to the compressing air vessel, and the compression of the air vessel itself. This is effected by arranging the lever or levers which move the valves in such manner that they by the same movement depress the air vessel and give the desired signal.

Fourth. In causing air vessels connected by tubes to a main compressing air vessel, with or without the improvements before mentioned, to transmit motive power for moving directly, or by intervention of suitable mechanism, hammers or other instruments to strike bells, fire cannon, indicate the passage of trains, by exhibition of lamps or semaphore signals and other similar purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 1.—N° 1101.

SLEIGH, William Arthur Warner, and PYE, Annie.—(*A communication from Henri Fritz Fritch.*)—(*Provisional protection only.*)—" An improved appliance for protecting trousers from mud."

This is to keep the lower end of trouser legs out of the mud, and consists in an appliance attached to the boot heel and composed of two plates, which are pivoted together at back, embrace the round of the heel, and are connected at front by an elastic cord. They have one or more spikes to enter the heel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 1.—N° 1102.

SMITH, William.—(*Provisional protection only.*)—" Improvements in the manufacture of pig iron."

The feature of novelty which constitutes this invention is the introduction of the raw ores into the blast furnace while still in combination with the oleaginous, hydrocarbon, and carbonaceous matters, in contradistinction to the present system of calcining these substances out of the ores before introducing the latter into the blast furnace.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 1.—N° 1103.

APPLETON, Leonard.—(*Provisional protection only.*)—" An improved method for calculating interest, " and apparatus therefor."

An arrangement of certain numerical figures representing ascertained amounts of money on a series of graduated revolving circles. These amounts are arranged in such manner that upon movement of the circles required the amounts are placed in a tabular form, and any sum in interest can be ascertained at a glance with certainty.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 1.—N° 1104.

DAVIES, George.—(*A communication from Marc Reichenbach and Samuel Golay.*)—" Improvements in the " construction of centrifugal ventilators or fans."

These improvements in the construction of centrifugal ventilators consists, firstly, in the addition to the circumference of the envelope or casing of an annular chamber serving as a receptacle for the air drawn to the centre of the apparatus, and which is compressed by the rapid movement of the wings or vanes; and,

Secondly, in the optional substitution for the vanes ordinarily employed of a circular brush made of horsehair, whalebone, or metallic wire.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 1.—N° 1105.

NORRIS, James, and QUARM, Thomas.—" Improvements in cooking apparatus."

This invention relates to improvements in cooking apparatus of the character described in the Specification of the Letters Patent granted to Robert Baker Jones, dated respectively February 23rd, 1856, No. 467, and

28th, 1863, No. 2672; and this invention has for its object improved arrangements and combinations
whereby the heat is more effectively utilized, greater facility being afforded for varying the numbers
g operations carried on, with additional convenience for packing up the parts more compactly
for removal from place to place.
d, 1s. 4d. Drawings.]

A.D. 1868, April 1.—Nº 1106.

R, Jacob, and CANDLIN, John.—(*Provisional protection only.*)—"Improvements in flooring,
nd bench cramps."
ivention refers to improved methods of constructing flooring, sash, and bench cramps, so as to
ready and effectual means of securing the jaws of the cramp and also of obtaining the forward or
iovement requisite in such kinds of tools.
d, 4d. No Drawings.]

A.D. 1868, April 1.—Nº 1107.

CH, George, and WHITEHILL, William.—"Improvements in cartridges."
netal case is formed with a solid flange for the extractor to operate on, and the wad is held in place
forced into an enlarged diameter of the case.
ed, 6d. Drawing.]

A.D. 1868, April 1.—Nº 1108.

LD, William.—"Improvements in belt fastenings, which improvements are also applicable to the
of parts of harness."
stenings consist of clamping plates which when applied to the ends of a band will grip the ends
thout possessing a tendency to cut through the fabric.
d, 8d. Drawing.]

A.D. 1868, April 1.—Nº 1109.

ON, Robert Joseph.—(*A communication from Messrs. Joseph H. Adams and Coombs.*)—
rements in cotton gins."
improvements have for their object the more perfect separation of the seed and motes from the
lint than heretofore, the prevention of napping, a partial carding of the cotton, and the prevention
stion from the heating of the journals. The whole apparatus is mounted and enclosed upon a
frame; in the front and under the feed box is the saw cylinder of the usual form, over which the
sses and is received by the ginning cylinder, which drives out the seeds and motes, causing them to
gh the blast board into the dust box; after leaving the ginning cylinder it is passed on to the
ylinder, and from thence by means of a curved guide into the straightening steel brush cylinder,
o acting as a blast cylinder carries the cotton into the cotton room. The ginning and carding
are the ordinary form with brushes on their ends and peripheries.
d, 6d. Drawing.]

A.D. 1868, April 1.—Nº 1110.

William Robert.—(*A communication from Silas Safford Putnam.*)—"Improvements in machinery
nufacturing horse-shoe nails."
ention relates to that class of nail machines in which the nail is formed by means of spring hammers;
ists, first, in so arranging the hammers together in pairs that one hammer of a pair will operate the
regulate its motions and throw, in order that both may strike the nail rod at the same instant.
invention also consists partly in vibrating one pair of the hammers (previous to cutting off the
ne side and away from the central position which they occupy when operating upon the nail rod
urpose of allowing the cutters to be brought into the required position to do their work. The said
also consists in so constructing the machine that the number of blows to which the nail is subjected
ng formed may be varied and regulated as desired. The vertical hammers are pivoted within a
frame, and the side hammers are formed and arranged to work between the vertical hammers.
ecting parts of one pair of hammers are arranged between the opposite pairs, so that one pair may
ed without interfering with the other pair. The hammers are connected by pins flattened to work
n the hammers. The said hammers are operated by cams on the driving shaft and by spiral springs.
nes employ a spring curled or rolled around a bolt attached to the framework and passed through
ate," whereby it may be tightened. The cutters are secured to levers pivoted to the vibrating
These levers are operated by means of levers and a rock shaft. The cutters are brought into line

with the nail rod by means of a slide operated by the rock shaft. One pair of the hammers and the cutters may also be vibrated to one side by means of a bent arm operated by a groove in a cam on the rock shaft. The number of blows to which the hammer is subjected is regulated by means of a lever spring and other mechanism which cause the rock shaft to operate the hammer frame, arrest the hammers, and bring the cutters into action. This mechanism is brought into action by means of a latch which is tripped by a slide raised by a pawl and lever and a cam on the driving shaft. When raised the slide is retained by another pawl. The slide may also be raised by means of a toothed dovetail guide which is operated by a lever vibrated by a cam on the driving shaft. The catch is in this case dispensed with, the end of a lever being caused to serve in its place. The vertical hammers are arrested and held apart while the nail is being cut off by means of a stop attached to the rock shaft. The nail rod after being heated in the furnace is fed into the machine by fluted rolls fixed on horizontal shafts to which an intermittent rotary motion is given by means of a ratchet wheel operated by suitable mechanism connected with the rock shaft.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, April 1.—N° 1111.

DUFORT, JEAN HIPPOLYTE, and GANCE, DOMINIQUE.—"Improvements in sewing machines."

The invention relates to apparatus chiefly applicable for sewing gloves and producing a whip stitch with a single thread. We use an ordinary sewing needle and also a comb for holding the material in position, such as used in hand sewing gloves. The needle is acted on by two pairs of grippers moving back and forth, one pair for passing the needle and thread through the material, and the other pair for seizing it after this has been effected.

This being done the thread is immediately acted on by rotating fingers fixed on flyers mounted on each side of the comb for tightening the stitch. The material to be sewn is placed between the clamps of the comb, which has motion in a vertical and transverse direction, the latter for advancing the comb tooth by tooth after the needle is passed between them, being effected by an endless screw, [*while the reciprocating vertical motion serves**] for producing the whip stitch by the aid of a cam on the driving shaft which produces the sliding motion of a plate carrying the comb.

One of the clamps of the comb is fixed and the other movable on an axis, the fixed clamp being connected by an arm to the endless screw above mentioned for producing its transverse motion.

Instead of making the needle work vertically or horizontally, as usual, we mount the grippers before mentioned at an angle of about 45 degrees, the framing being made of special form and arrangement for the purpose.

[Printed, 2*s.* 4*d.* Drawings.]

A.D. 1868, April 2.—N° 1112.

SAXBY, JOHN.—(*Provisional protection only.*)—"Improvements in apparatus for actuating, locking, and "regulating railway switches, points, and signals."

Applying in close proximity to the points & switches of railways, and to the signals employed for regulating traffic, certain mechanical contrivances by which they may be actuated or set in motion and be locked or secured in one or more positions, and whether actuated from a point near to or at a considerable distance therefrom, or by one or by several persons, so as to ensure a reliable or perfect action irrespective of the contraction or expansion of the connecting wire or wires or rods. This is effected by combining a sliding or traversing bar, having plain or straight parts combined with angled portions thereof, which take into and slide between the angled or bevilled faces of an angular slot or recess in a plate or bar, and thereby either produce a movement at a right angle, or a locking or holding fast, according to whether the angled surfaces or the straight portion of the sliding bar are in action or contact.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 2.—N° 1113.

LEAHY, EDMUND. — (*Provisional protection only.*) — "An improved moveable railway for ordinary "carriages."

The moveable rails revolve around the wheels on each side of the carriage, without however coming in contact with the wheels, except where being rolled upon. The rails consist of a series of short bars united at the ends by joints, like the toes of a human foot, and further united by elastic bands of steel or other material, forming each series of rails into a ring of larger diameter than the wheels, and in contact with them only where they are being rolled over or upon.

[Printed, 4*d.* No Drawings.]

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* The words "while the reciprocating vertical motion serves," are found in the copy of the Abridgment delivered by the Applicants, but do not appear in the original Abridgment.

A.D. 1868, April 2.—N° 1114.

BAKER, THOMAS—" Improvements in umbrellas, sunshades, and parasols."

The chief feature of novelty in my invention is the use of an additional and [*shorter**] stretcher attached at one end to the rib, at a point below the ordinary stretcher, and in a similar manner, the other end being so constructed as to slide or run upon the ordinary stretcher, increasing the strength and preventing the umbrella, sunshade, or parasol from being turned inside out.

[Printed, 6d. Drawing.]

A.D. 1868, April 2.—N° 1115.

JACKSON, ANDREW, and HARTLEY, JOHN.—" Improvements in braiding machines."

This invention consists in improved mechanism for giving revolving motion to the carriers.

A bevil wheel is fixed on the centre stud gearing into a bevil pinion fixed on the driving shaft of the machine, and below the bevil wheel is fixed a large crown or centre wheel gearing into long pinions fixed on every other carrier, which pinions gear into shorter pinions on the other carriers so that the short pinions are in gear with the long ones and yet be out of gear with the large crown wheel, so that the carriers having the larger pinions shall turn in a contrary direction to those having the short ones.

[Printed, 10d. Drawing.]

A.D. 1868, April 2.—N° 1116.

LAFONE, HENRY, and NICHOLAS, JAMES.—" Improvements in the mode of and means or furnaces " for burning petroleum and other like liquids."

This consists in burning petroleum or other hydro-carbons or oils in a closed furnace with air at a pressure above the natural atmospheric column.

It also consists in special means or furnaces for practical use. The bed or grate is of iron, fire brick, or other material, preferably in a sloping position and perforated. Underneath the grate is a chamber for receiving the air at pressure; from this chamber the air is led into, around, and over the bed or grate, and injected into and dispersed all over the furnace from distributing pieces. The hydro-carbon or oil is caused or allowed to flow over the grate, and by its vapour becoming intimately mixed with air more perfect combustion than hitherto has been effected is induced.

[Printed, 10d. Drawing.]

A.D. 1868, April 2.—N° 1117.

DALE, JOHN GALLEMORE, and MILNER, EDWARD.—" An improved method of producing white pigments " from lead."

The invention consists,—

First. In taking the oxide of lead commonly known as litharge and treating it in a finely ground state and under constant agitation with a solution of a chloride of the alkalies or alkaline earths.

Secondly. Instead of the above process hydrated oxide of lead may be prepared by any well known method, and after being freed by washing from any saline matter is ready to be treated as next described.

Thirdly. In taking the compound described in the first part, hydrated oxides of lead or mixtures of any proportion of them, and adding sufficient water to form a thin paste, which is put into a suitable vessel closed and fitted with machinery to keep the mixture in constant agitation. Carbonic acid is now passed into this vessel, when it is rapidly absorbed, and the whole mass after the lapse of 3 or 4 days will be found converted into carbonate of lead possessing great body and opacity. It is then well washed and levigated to free it from any undecomposed litharge. The levigated pigment is then dried and may be used for any of the purposes for which the so called white lead of commerce is applicable.

[Printed, 4d. No Drawings.]

A.D. 1868, April 2.—N° 1118.

ROBERTSON, WILLIAM.—(*A communication from James Douglas Robertson.*)—(*Provisional protection only.*)—" Improvements in machinery or apparatus for making mitre or other angular joints."

The feature of novelty which constitutes this invention is the special arrangement of apparatus whereby the mitre or angular joints between two or more pieces of timber can be speedily and economically cut or shaped.

[Printed, 4d. No Drawings.]

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* The word " shorter," is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

A.D. 1868, April 2.—N° 1119.

NAPIER, John.—"Improvements in apparatus for steering ships and vessels."

According to this Provisional Specification two rudders are employed for steering ships and vessels. One is hung in the usual way behind the rudder post and the other in front of the rudder post, an opening being formed to receive it. The spindles of the two rudders may be connected together, so that they may turn in the same direction.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 2.—N° 1120.

BOARDMAN, William Edwin.—(*A communication from William C. Selden.*)—"A new and useful "improved steam and water packing for use in packing stuffing boxes of steam engines, making joints, and "other like purposes."

This invention consists in the combination, for the above purpose, of paper pulp or other like substance with cloth, hemp, india rubber, or other similar substances, and with soapstone, plumbago, sulphate of zinc, or other like mineral, and with tallow or other like oleaginous substance.

This improved packing may be manufactured as follows, or in any other suitable manner:—

For stuffing boxes paper cut to suitable size may be stirred in water with powdered soapstone or plumbago. The mixture is then spread on cloth, hemp, or a thin sheet of india rubber, and rolled up into a cylindrical form; it is then coiled around a metallic cylinder of the same size as the piston rod the packing is designed to encircle, and dried, after which it is saturated with hot tallow, cooled, drained, and cut into open rings ready to place in the stuffing box.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 3.—N° 1121.

WALMSLEY, James, and WALMSLEY, Thomas.—"Certain improvements in apparatus to be employed "for warping and beaming yarns or threads."

The novelty of the invention consists in mounting the "cops" or "spools" in a series of vertical frames, which are supplied with guide or tension rods and "faller tension wires" around which the threads pass; the yarns thence pass through guides and beneath hooked wires (or through eyelets), which they support in a vertical position when unbroken, and in front of these wires a frame of horizontal bars are placed which have a regular lateral reciprocating movement, which motion is only prevented by the disunion of a thread and the falling of its wire, and through an arrangement of self-acting mechanism the apparatus is stopped thereby when the thread breaks.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 3.—N° 1122.

DE METZ, Augustus.—(*Provisional protection only.*)—"Improvements in commodes or vessels to be used "as waterclosets, expectorating utensils, or for other purposes."

Pan trapped to prevent effluvia by channelled recess on or carried by pan, and with non-corrosive lid dipping into recess.

Connecting to an outer case around pan by beading on pan affording a hold for a clip or band to be soldered or fastened to outer case.

Applying papier machée or other low heat conducting material to the seats of commodes, &c., so that the seat shall not strike cold to the person using it.

Placing commodes, &c. in gimball supports so as to render them level at any angle the ship, &c. may be at.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 3.—N° 1123.

CROSLAND, James Stead.—"Improvements in or applicable to steam engines."

The improvements relate principally to methods of compounding steam engines, and apply—

To beam engines having a steam cylinder (C) at the end of the beam, and one (A) between the fulcrum of the beam and the crank shaft, and another in a horizontal or oblique position working directly upon the crank pin; and the improvements consists in taking the steam from A to B, and from B to C. When two engines of the above class are coupled to the same crank shaft and with cranks at right angles with the cylinders B oblique, then designating the cylinders of one engine A, B, and C, and the corresponding cylinders of the other A^1, B^1, and C^1, the invention consists in taking the steam from A to B^1, and from B^1 to C, and from A^1 to B, and from B to C^1. The last described arrangement is also used when the cylinder B is horizontal, the cranks being set a suitable angles. The invention also relates to coupled beam engines with two or three cylinders connected with the same beam, and to coupled horizontal engines, with two or more cylinders to the same connecting rod. The improvements in such coupled engines consist in setting the cranks at the most suitable angle (greater or less than 90 degrees), and taking the steam from the cylinders of one engine to those of the other; the object in all these arrangements being principally to cause the steam to begin to exhaust from one cylinder at the most suitable time for admission to the next cylinder in which it is to be used. The improvements also consist in applying two oscillating or other cylinders so that the piston rod of one will be attached to a main crank and the piston rod of the other to a crank set off from the main crank at a smaller radius. The improvements also consist in applying gas flames to the steam pipes, bottom of the cylinders, steam chests, and others parts to prevent condensation.

[Printed, 2s. 6d. Drawings.]

A.D. 1868, April 3.—N° 1124.

ABEL, Charles Denton.—(*A communication from Charles Emile Perret.*)—(*Provisional protection only.*)—"A new or improved process and apparatus for refining camphor."

This invention consists in refining camphor by a process of distillation and by running the same while in a fluid state into moulds, instead of by the process of sublimation heretofore employed.

The crude camphor is placed in an alembic having a separate dome shaped cover fitting into a trough shaped rim on the alembic. This apparatus is enclosed in a chamber filled with sand heated to 400° Fahrenheit.

The camphor in distilling first solidifies on the cover before the requisite temperature has been attained, after which the hotter vapour of camphor melts this solidified deposit, and in condensing flows down in a liquid form into the trough, whence it is conducted through a spout into moulds also contained in the chamber. The moulds are made so as to divide, and are coated with potters' earth and glue at the crevices to prevent running, which is then coated with a mixture of lime water and glue, from which the camphor when solidified readily separates.

The process of distillation may be employed without the arrangement for running the camphor into moulds by allowing the camphor to run into a chamber in which it solidifies in a pulverulent and crystaline form.

[Printed, 4d. No Drawings.]

A.D. 1868, April 3.—N° 1125.

WALLACE, John.—"Improvements in apparatus for digging potatoes."

This invention relates to improved apparatus for digging potatoes, and consists in constructing it with grapes or rakes fixed to endless chains and actuated from the carrying wheels so as to throw the potatoes in a backward direction as the apparatus moves forward. Two coulters fixed to the front of the framing make two vertical cuts, one on each side of the drill of potatoes, and a grating with a shovel-like forward end is fixed to the framing so as to enter under the potatoes, a little in advance of the grapes, whilst the points of the grapes enter between the bars of the grating and carry the potatoes backwards over it.

[Printed, 8d. Drawing.]

A.D. 1868, April 3.—N° 1126.

McCULLOCH, James.—(*Provisional protection only.*)—"Improvements in utilising old or waste tarpaulin in the manufacture of grease and other useful products, and in apparatus therefor."

This invention is carried into effect by first boiling the tarpaulin in a strong solution of alkaline hydrate or carbonate, whereby the tarry matter is removed from the canvas; secondly, in obtaining a product suitable for grease and otherwise by evaporating the liquor to dryness or comparative dryness (after removing the cleansed canvas which may be used for making paper); thirdly, in adding any acid or oleaginous or fatty matter to modify the condition and quality of the grease obtained by evaporating the liquor; and, fourthly, in using a closed boiler revolving on a horizontal or inclined axis in the first process of boiling the tarpaulin. The product is suitable for grease, for blacking, for paint, or for a waterproofing material.

[Printed, 4d. No Drawings.]

A.D. 1868, April 3.—N° 1127.

HARWOOD, John.—"Improvements in sewing machines."

This invention relates to improved arrangement of apparatus for working the embroidering fingers, and consists in the use of a shaft actuated from the cross arm actuating a second shaft, the latter giving motion to a star wheel and eccentric for working the embroidering fingers. Also a "tuck marker," consisting of a spiked wheel on an adjustable spindle attached to the foot presser and to a trimmer consisting of a grooved strip of metal and adjusting screws so as to be readily set for any width of braid.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 3.—N° 1128.

BALDWIN, Cyrus W.—" A new and useful device or instrument for measuring and registering the " amount of a flowing liquid."

My invention relates to apparatus for measuring and indicating the amount of a flowing liquid, whether in large or small quantities.

The apparatus consists in a hollow circular case or box of suitable construction, divided at its centre with two separate chambers by an elastic diaphragm, each of such chambers being constructed with an inlet and outlet aperture or passage, the two outlets joining in one general outlet, and the inlet in like manner communicating with one general inlet or supply throat, and provided with valves connected with the diaphragm for allowing the liquid to alternately escape from one chamber and closing the escape from the opposite chamber. As the liquid flows into one chamber of the apparatus it begins to flow out of the opposite chamber, and the diaphragm is carried with the moving liquid until it reaches its extreme movement in this direction, when it actuates the machinery and cuts off the flow of liquid to the first chamber and from the second, and reverses the valves so as to allow the liquid to flow into the latter chamber and escape from the former.

The alternate movements of the diaphragm are denoted and registered by a suitable indicating mechanism attached to the instrument, whereby the amount of liquid flowing into it is accurately noted.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 3.—N° 1129.

MARTIN, Alexander.—(*Provisional protection only.*)—" Improvements in bonnet shapes."

My improvements consist in the manufacture or ornamentation of bonnet shapes or foundations by making them of figured muslin, cotton lace, or other open figured cotton fabric in lieu of the net or buckram now used. These shapes may either be covered and trimmed in the ordinary way or the pattern of the muslin may form part of the design and complete the ornamentation of the bonnet.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 3.—N° 1130.

JOHNSON, John Henry. — (*A communication from Francis Ellershausen.*) — " Improvements in the " manufacture of cast steel and malleable iron from cast iron, and in the apparatus or means employed " therein."

This invention consists of a process for making cast steel or malleable iron from cast iron by placing curled sheet iron or spongy iron as it comes from the puddling furnace in a converter and oxidising the iron by bringing it to a white heat. Molten cast iron is then poured into the converter so as to unite with the oxide of iron, whereupon a rapid and simultaneous combustion of the entire mass takes place. When this subsides, the conversion of the cast iron is complete and the metal is run off.

This said invention further consists of special forms of apparatus for practically carrying out the above process, such apparatus consisting essentially of a convertor placed on or constructed above a furnace with flues or passages between, so arranged as to enable the communication with the furnace below to be readily opened or shut off. The curled sheet iron is placed in the convertor, and the flame from the furnace admitted until the iron has attained the desired temperature. After this, the communication with the furnace is shut off, and the molten cast iron is poured into the convertor so as to mix with the oxide of iron formed therein.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, April 3.—N° 1131.

JONES, Jerome Valentine, and WILLIAMS, George James.—" Improvements in the manufac- " ture of ornamental metallic tubes."

One part of this invention consists in making open jointed ornamental tubes by taking a plain strip of sheet brass or other sheet metal and impressing or indenting the said strip by means of ornamental rolls, with a pattern or design in relief, and bending the ornamented strip into an open jointed tube in the ordinary manner.

Another part consists in making open jointed ornamental cased tubes by turning up the edges of a plain strip of thin sheet brass or other metal, and placing upon it a sheet iron strip to form the lining of the tube upon which sheet iron strip the edges of the sheet brass are turned down. We then pass the compound strip through ornamental rolls, whereby it is ornamented. The ornamented compound strip is bent into an open jointed tube in the ordinary manner.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 3.—Nº 1132.

PIGGOTT, George.—(*Provisional protection only.*)—" Improvements in electric telegraphs."

This invention consists, firstly, of a differential ratchet wheel or barrel having teeth equal in number to the letters of the alphabet or other required number; these teeth are cut away in steps. At the extreme end only one tooth is left; near this two, and so on to the other end. A ratchet capable of sliding from end to end presses on the barrel. If the barrel is turned round once the ratchet, if at one end, strikes the only tooth at that end; if at the other end it strikes all the teeth at each rotation, and an intermediate number at an intermediate position. On striking each tooth it sends a current to the distant station, and according to the position of the ratchet the required number of currents are sent on each rotation of the barrel to reproduce the required letter at the other end.

This invention consists, secondly, of a receiving apparatus moved one tooth by each current sent from the differential barrel. A needle on the axis of the apparatus indicates the required letter. A clutch is employed to release the needle after each indication, the needle being carried back to zero by a spring.

This invention consists, thirdly, of a printing apparatus. This consists of a type and figure wheel carried by the needle shaft. By the lever which releases the needle a presser is urged forward and made to press the paper against the type wheel. The same lever also withdraws the presser and moves the paper forward the proper distance to receive the next letter.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 3.—Nº 1133.

WILLIAMS, William.—" Improvements in the manufacture of tin and terne plates."

This invention consists of improvements on an invention described in the Specification of the Patent granted to the applicant and to John Hughes and George Leyshon, No. 2131, year 1860. According to the present invention the pot or vessel containing hot grease, and the pot or vessel containing tin or terne metal, called the tinman's pot, are dispensed with, and a washman's pot is used divided into three or more compartments, each compartment containing tin or terne metal, and the surface of the metal in the first and third compartments being covered with flux or grease. The plates are first immersed in the metal of the first compartment through the flux or grease, next under the division of the first and second compartments into the metal in the second compartment. From the second compartment the plates are lifted and then plunged into the metal of the third compartment through the grease or flux. From thence they are carried to a rack and the manufacture finished in the manner described in the Specification before referred to.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 3.—Nº 1134.

TONGUE, John Garrett.—(*A communication from Casimer Rakowski.*)—(*Provisional protection only.*)—" Improvements in lamps or apparatus for lighting or illuminating purposes."

These improvements relate to the arrangement and construction of lamps which resemble candles, being made either in glass, opal, porcelain, copper, cast metal, or other suitable material.

These lamps or imitation candles are constructed so that they may be used either in a chandelier, candlestick, or other form of lighting apparatus, and they may be placed either in a candlestick or socket, candelabra, or other support.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 3.—Nº 1135.

ROW, Thomas, and SCOTT, Samuel.—" Improvements in the manufacture of paper hangings."

The Provisional Specification describes the application of finely ground cork as a substitute for flock in the manufacture of flock paper hangings, whereby a new description of ornamental raised surface is produced, and the manufacture reduced in cost.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 4.—Nº 1136.

BUTCHER, Henry Charles.—(*Provisional protection only.*)—" An improved tobacco pipe."

This invention consists in forming the stem of a tobacco pipe with double bore, one of the perforations forming the usual smoke conduit, and the other a receptacle for a needle or rod.

This needle is drawn out of its receptacle when required for clearing out the bowl of the pipe previous to charging it with fresh tobacco, or for removing any obstruction from the smoke conduit, and when replaced, its head will appear to be simply an ornament, and this useful appendage will not be apparent.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 4.—N° 1137.

COCHRANE, Henry.—" Improvements in blast furnaces."

This invention consists in closing the tops of blast furnaces with a covering plate having centrally a large explosion valve fitting in an annular trough with a sand lute, and provided with guides, round which valve a series of hoppers for receiving the materials are arranged, projecting slightly above the covering plate, where they are provided with hinged and balanced covers, while below they are provided with doors opening into the blast furnace and arranged to close of themselves by means of balanceweights and catches; they are opened by means of a lever actuated from the top of the covering plate. Or the doors may be arranged to slide up and down.

Sloping edges are formed at the mouths of the hoppers for the trucks to rest on when tipped, and a wooden sill is provided for the wheels to strike against.

By preference a small valve, also fitting into a trough with a sand lute, is provided in the middle of the explosion valve and connected to a hand lever, by which it can be opened when the metal is being run from the furnace.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, April 4.—N° 1138.

JOHNSON, William.—(*Provisional protection only.*)—" New or improved machinery for compressing " and moulding coal, peat, clay, and other plastic materials."

1st. The measuring arrangement.

2ndly. Form and construction of mould or die by which a saving is effected in the length of stroke of piston, and consequently of the steam consumed at each stroke.

3rd. Any shape or design may be given to the compressed blocks without the use of moveable pallets or division plates.

4th. The continuous action of the plunger in the mould both compresses and discharges the blocks when compressed; and the plunger may be cleansed and lubricated when necessary without any stoppage of the works.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 4.—N° 1139.

CALVERT, Francis Alton.—" Improvements in machinery for cleaning and preparing cotton and other " fibrous substances, also for selecting the long from the short fibres, and for opening twisted yarns and " woven fabrics."

My invention consists, first, in an apparatus for feeding the fine comb cylinder.

Secondly, in the combination of one or more fixed comb bars, with an oscillating comb for disengaging the dirt from the fibres.

Thirdly, in applying revolving combs instead of a fluted roller to the fine comb cylinder.

Fourthly, in stripping the fibres from the fine comb cylinder by a suitable doffer at which the long and short fibres are separated; and,

Fifthly, in an improved grate through which the dirt passes, and which sifts the fibres forward.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 4.—N° 1140.

FAUCHEUX, Theodore.—(*Provisional protection only.*)—" Improvements in the construction of axles " of the wheels of railway rolling stock and other vehicles and other axles and driving shafts."

This invention consists in making axles or shafts of several pieces of metal by placing in a tube an uneven number of conic segments of iron or steel so shaped that together they shall form a round body filling the tube.

Two or more tubes may be used placed one over the other, and may be, if required, divided into shorter lengths, which when placed together will form the entire length of the axle or shaft.

Instead of employing conic segments an iron or steel body in the form of a cross may be used, the angular spaces being left empty or filled up with segments.

Instead of a tube or tubes a band or sheet of iron may be rolled round the segments.

The bearing ends of the axles or shafts may be covered with a tube end of the form of the axle-box or bearing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 4.—N° 1141.

ILLINGWORTH, Alfred, and ILLINGWORTH, Henry.—" Improvements in means or apparatus " employed in folding worsted or other yarns."

The object of the improvements is to secure a more uniform motion to the vertical feed rollers, which are at present driven by bands or tapes, and round which the threads pass to the spindle, cup, or cap to be adjustable by frictional pressure. A tooth or other wheel acts by surface friction to give motion to another wheel applied to the axle of the feed roller, and the extent of friction exerted is regulated by a spring and adjustable stop. When a thread breaks and a stoppage of the feed rollers is required, this may be effected by raising them out of gear by means of the usual lever or by the application of a stop to overcome the frictional motion.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 4.—N° 1142.

DE MASSAS, François Antoine Edmond Guironnet.—" Improvements in machinery for cleaning " cotton seeds."

This consists, 1st, of regulated and graduated means of feeding the seed according to its nature; 2nd, of means of rubbing or producing friction on the seeds; two modes are described, one for seeds without and the other for seeds with cotton adhering to them; 3rd, of means of regulating the brushes or drums, when of conical form, so as to regulate their distance from the casing; 4th, of means of ventilating the outside and inside of the machine to cool it and drive out debris; 5th, of means of readily emptying the machine; and, 6th, of an arrangement of riddles to separate the seed, cotton, and dust. Reference is made to former Patents, Nos. 1480^{64} and 2196^{65}.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 4.—N° 1143.

GREENSTREET, Francis Hastings.—" Improvements in targets, arrows, darts, and other projectiles, " more especially adapted for indoor use and amusement."

This Provisional Specification describes targets made with a brush like face and arrows and darts with brush like points. Also targets covered with points, and arrows and darts with soft ends. Also targets of network, with a soft material at a distance behind. Also the regulating the flight of arrows and darts by the application of a tuft of fur or similar material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 4.—N° 1144.

NABBS, Richard.—" Improvements in locks and latches."

According to this Provisional Specification the bolt is made of a rectangular form; it has a cylindrical stem fixed to it surrounded by a spiral spring, and projecting back to the rear end of the lock case, where it passes through a guide. The portion of the stem in rear of this guide has a slot formed in it, through which a lever passes, which is actuated by the horns of the follower on the lock spindle, or the follower which is fast on this spindle may be made with one horn only passing through the slot in the stem. In order to lock a latch bolt arranged as above the stem of the bolt has a slot in it or a projection upon it, into or behind which a small bolt is shot. Latch bolts may also be made in a similar manner, the locking bolt being omitted.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 4.—N° 1145.

TURNBULL, Charles Edward.—(*Provisional protection only.*)—" Improvements in paper-binders or " eyelets, and in means or apparatus for fixing together papers and other articles by means of such and " other paper-binders or eyelets."

The invention consists, firstly, in forming the stems or points of paper binders or eyelets of a curved sectional form to give additional strength thereto.

The invention relates, secondly, to means or apparatus for operating upon paper binders or eyelets; and consists in forming, on each side of the ordinary hole in the centre of the plunger, an incline or inclined hole, which when the plunger is forced down act first to bend outwards the points of the eyelet or paper binder, and then by a second action of the plunger, the points of the paper binder or eyelet are pressed down upon the papers or other articles to which it is applied.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 4.—N° 1146.

DAVIES, George.—(*A communication from Max Braun.*)—" Improvements in apparatus for washing and " separating ores and other materials."

This apparatus comprises a sieve or perforated plate slightly inclined from the horizontal and fixed in a cistern or hutch, in another part of which a plunger is made to reciprocate by a revolving crank or equivalent means. The cistern is filled with water, and the action of the plunger causes the water to work up and down through the sieve. The bottom of the cistern is by preference of a semicircular form. The apparatus also comprises a hopper, into which the ores or materials are put after having been crushed, and through which a small stream of water flows. The materials pass gradually from the hopper by a regulated opening down upon the upper end of the sieve, and gradually work their way to the lower end thereof.

The jigging action of the water causes the materials to be separated into layers according to their specific gravities. Three discharge ducts are fitted to the casing of the cistern above the lower end of the sieve, and the lightest portions of the materials pass off by the uppermost duct, whilst the heaviest or the washed and separated ores pass off by the bottom one. The materials discharged by the middle duct are termed " seconds," and are in general put through the apparatus a second time to complete their washing and separation.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 4.—N° 1147.

CAMPBELL MAC IVOR, Duncan.—" Improvements in propelling ships, and in the means or apparatus " employed therefor."

The feature of novelty which constitutes this invention is the application of pistons working in horizontal cylindrical chambers in the interior of the ship's hull for propelling purposes; also the use of side propellers or wings for either stopping " head way " of the ship or for auxiliaries to the piston propellers.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 4.—N° 1148.

GRIFFITHS, John, and JEAVONS, Joshua.—(*Provisional protection only.*) — " Improvements in the " manufacture of piles of iron or steel or of iron and steel for the manufacture of rails, angles, axles, tyres, " shafts, and other articles."

According to this invention the pile is composed of four bars or plates, the top and bottom bars overhanging or embracing the side bars and holding them in their places. The junctions of the four bars described are made by scarf joints. The box or case made by the four bars is filled with bars or scraps of iron or steel or with a solid bar or bloom.

When the interior of the pile is made of one bar or bloom separate side external bars are dispensed with, the edges of the internal bar or bloom being bevilled to form the scarf joint with the top and bottom bars.

The outer bars of the pile may either be made wholly of steel or wholly of iron, or partly of iron and partly of steel. When the outer bars or some of them are made of steel a projecting rib is made at about the middle of each bar, which rib extends into the pile, but does not fill up the space in the middle of the pile. By this means a hollow is formed in the middle, and the pile is thereby more readily heated and the steel more effectually welded to the iron.

Or the external surface of the pile may be made of a coil of iron or steel, the said coil being coiled round the internal material, or the internal material may be placed within the coil after the latter has been formed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 6.—N° 1149.

BRYCESON, Henry, BRYCESON, John, and MORTEN, Thomas Honor.—" Improvements in the " construction of organs, and in the application of electricity thereto."

These improvements consist in a special construction of sound board pallets by means of a diagonal bellows forming the valve, and opened or closed by the alternate action of an exhaust or pressure application of the compressed air in the sound board and bellows. It may be used either with an electric or mechanical key or pedal action, and by this construction of pallet a perfectly light touch is obtained without the aid of intermediate pneumatic power bellows. Also for a special combination and arrangement of pneumatic power bellows and electro magnets for working the sound board slides. And also for a special arrangement of contacts for electric combination movements of the stops.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, April 6.—N° 1150.

CRICHTON, David, DONBAVAND, William, and CRIGHTON, Duncan.—(*Provisional protection only.*)—" Improvements in looms for weaving."

We apply to the shuttle swells in the shuttle boxes a supplementary spring action or its equivalent for steadying the shuttle when in the boxes; and also employ certain mechanical movements for the purpose of taking off the pressure of the stop rod fingers from the swells before and at the time the shuttle leaves the box, and the supplementary spring action for keeping the shuttle steady in the box to receive the picker stroke, and regulating his race across the board, and at the same time allow the required pressure to be given to the swell when the shuttle arrives in the opposite box.

[Printed, 6*d.* Drawing.]

A.D. 1868, April 6.—N° 1151.

HAY, Eugene.—(*A communication from Claude Marie Bathias.*)—(*Provisional protection only.*)—" Improvements in means or apparatus for measuring and indicating the passage or flow of liquids."

The liquid to be measured is caused to flow through an annular chamber, which thereby becomes filled; in this annular chamber there are a series of buckets or floats or paddles supported so as to move therein from an axis capable of revolving. These buckets or floats or paddles, by the action of the liquid passing through this chamber, have motion given to them to move the axis to which they are affixed.

The inner surface of the annular chamber is formed with teeth or serrations, which control the action of the liquid on buckets or hollow floats. As the buckets or floats or paddles revolve and give motion to the axis to which they are applied, motion is given from such axis to a chain or series of wheelwork with dials to indicate the extent of liquid passed.

The passage or flow of the liquid is regulated by a cock or tap or cocks or taps. When two cocks or taps are employed, one to and the other from the measuring compartments, I prefer that they be connected together and that the area of the passage to the measuring chamber be kept freer than the escape in order to the measuring chamber being kept full.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 6.—N° 1152.

DUNBAR, James, and NICHOLSON, Richard.—" Improvements in the construction and arrangement of machinery or apparatus for supplying coal, cannel, or other substances to retorts or ovens, and for withdrawing the same after distillation; also improvements in retorts, retort chambers, mouthpieces, doors, covers, or lids."

Our improvement consists in an overhead traverser carrying the scoops, rakes, rams, or a combination of them, together with the motive power.

The scoops for supplying the coal into retorts have rakes or claws attached to draw the charge.

We also arrange two or more scoops side by side or a tray constructed to open by trap doors or down the centre.

An endless metallic band or chains are also used to charge and discharge the retorts.

Where one compound scoop only is used it is supported by one or more arms radiating from a centre, whereby it is adapted to retorts on any level.

The engine and boiler are arranged to travel transversely, with framework carrying the compound scoops, bands, or trays, or engine alone, the steam being supplied by flexible or other pipes from a stationary boiler, or motion may be communicated from a line of shafting driven by a stationary engine with frictional or other gearing.

The coal is supplied to scoops or bands from a travelling tender fitted with an elevator and shoots, or by means of a hopper with crushing machinery to reduce the lumps of coal.

In the arrangement of the retorts we form a chamber or chambers, into which one, two, or more enter, and closed by one door, in which openings are formed, with separate covers to communicate with any one retort.

We also form a cylindrical chamber with an internal cylinder acting as a door. These chambers are constructed to support ends of retorts. We also use chambers formed of brickwork.

To single D or other shaped retorts we attach a frame with a coned face, with channels or grooves fitted with metallic rings or any composition, and doors to correspond.

[Printed, 1*s.* Drawing.]

A.D. 1868, April 6.—N° 1153.

MORELAND, Richard, the younger, and **THOMSON, David**.—"Improvements in pumping engines "and steam boilers therefor, which steam boilers are also applicable to other purposes."

One part of this invention relates to direct acting pumping engines, and consists in connecting the steam cylinder rigidly and compactly to the pump cylinder, the piston of the steam cylinder being connected directly to that of the pump, while the lower valve box is bolted against the bottom of the pump cylinder in such a manner as to be readily detached and moved sideways on rails, so as to gain access to the valves, the valve box being supported on wheels for this purpose.

The steam boilers to such pumping engines are provided with pendant water tubes, of which the upper end of the inner tube is continued sideways to another part of the boiler, so as to cause solid water at a lower temperature to pass into it. This arrangement is also applicable to steam boilers applied to other purposes.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 6.—N° 1154.

GARDNER, Charles Henry, and **BICKERTON, Joseph**.—"Improvements in lithographic, zincographic, and typographic printing machines."

To raise and depress the table in order to adapt it for various thicknesses of stone, an inclined plane actuated by a screw is worked against an inclined surface on the table. The registering point is caused to work in a steady and uniform manner and to protrude through the feeding board to the same extent whatever its position by mounting it in a frame consisting of slotted arms attached to the feeder by pins furnished with springs, levers, or arms, cams or tappets work under the frame bars so as to adjust the position of the frame and keep it parallel with the feeding board. A proper lay of the paper or other material, and regularity of adjustment of edge and margin, are obtained by using a spring slide stop, against which the edge of the paper or material is placed or fed; and this spring slide stop is depressed by the gripper as the latter advances to seize the paper or material, and when released the spring of the slide stop forces it up again ready for action. The stop is adjustably fitted in a frame; there may be any number of such stops. The ink roller may be actuated by a pitch chain or endless chain working on chain pulleys, whereof the lower is preferably half the diameter of the upper, which is on the ink roller or on its axis; and the cam on the latter is double or double ended, so as to actuate the ductor roller in such manner as to bring it in contact with the ink roller twice for every revolution of the latter. For lifting the ink rollers free of the slab, shafts or rods are used, worked together under both axes or pivots (of each roller), there being a pin or stud on each shaft or rod engaged in an excentric slot or cam path in a plate or block worked by a lever arm or cam; the stud, and therefore the shaft, being raised when the lever or cam brings the higher part of the slot or path to the stud. The spring slide used for engaging and disengaging the cylinder and driving rack has on it a stud raised and lowered by an excentric recessed at one part and worked by a lever or cam. The speed of the cylinder when approaching the end of its travel is checked or retarded by a break consisting of an arm having a pad, buffer, break, or friction surface at its upper end, and an inclined surface at its lower end, against which works a stud on the table when the latter approaches the end of its travel, causing the upper end of the break arm to come with its friction surface against the cylinder.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, April 6.—N° 1155.

MENNONS, Marc Antoine François.—(*A communication from Henry Cook.*)—"Improvements in "apparatus for the transmission and reception of typographic or autographic telegrams."

This invention relates to an improved method of applying synchronism in apparatus used for the electrical transmission and reception of autographic and typographic telegrams.

It mainly consists in the application to the transmitting and receiving instruments at each end of the line of a metallic shaft, on which are cut two deep screw threads of the same pitch, but running in opposite directions. On this screw is mounted a chariot combined with a conducting point so arranged as to travel continuously to and fro on parallel rails in contact with the metallic types composing the telegram.

[Printed, 1*s*. Drawings.]

A.D. 1868, April 6.—N° 1156.

PLESSNER, Johann Maximilian.—"Improvements in the mode of and apparatus for obtaining motive "power."

These improvements in the mode of and apparatus for obtaining motive power are based on the production of a partial vacuum by the alternate rarefaction and cooling of atmospheric air.

The apparatus employed may be composed of two or more pneumatic cylinders enclosed in jackets containing cold water, provided with lamps for the combustion of a liquid fuel, and communicating either directly with a driving cylinder or with an intermediate pneumatic reservoir. The mode of construction may, however, be varied to an indefinite extent, according to the intended application of the invention and the nature of the fuel employed.

[Printed, 4*s.* 2*d.* Drawings.]

A.D. 1868, April 6.—N° 1157.

RADCLIFFE, James.—(*Provisional protection only.*)—"Improvements in processes and means employed "in the manufacture of iron and steel."

This invention relates to certain improvements in the process of puddling and treating iron and steel, the effects of which are to improve the quality and lessen the cost of production by the introduction of a hot blast of atmospheric air or other heated gases, by means of pipes, tubes, or other suitable contrivances.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 6.—N° 1158.

PERRY, John.—"Improvements in packing bottles and similar articles, and in cases or holders therefor."

This invention relates to a peculiar mode of packing bottles, jars, and similar articles, and in the construction and arrangement of cases or holders therefor, whereby bottles so packed are not only protected from accidental breakage during transport, but a given number may be packed in a much smaller compass than heretofore.

According to this invention it is proposed to fit into a box or packing case a number of light tin tubes, of suitable height and diameter, according to the dimensions of the bottles to be packed, each bottle being intended to be dropped into its own tube. The several tubes are so arranged that the tubes in one row break joint with those of the adjoining row in lieu of each tube being exactly opposite its neighbour, whereby a saving of space is effected and the entire area of the box or case, with very little [*loss*,*] is subdivided into a number of cells somewhat like a honeycomb for the reception of the individual bottles. I sometimes place one layer of tubes, say two dozen, for example, horizontally or on their sides, in the bottom of a case, and in front of this set of tubes I introduce another set or row of, say, two dozen tubes, the several tubes in each set being held or fastened together in any convenient manner; between the two opposite sets of tubes I introduce a sheet of metal so perforated as to take the necks of all the bottles in both sets of tubes, the necks being made to face eaeh other and to fit "neck and neck" together without the possibility of touching each other. In some cases wire or twine may be used in lieu of tin tubes, and the system of tubes, or of wire, or twine netting, may be adapted to wine cellars or stationary receptacles for bottles as well as to packing cases for transport.

[Printed, 8*d.* Drawing.]

A.D. 1868, April 6.—N° 1159.

DESNOS, Charles.—(*A communication from Charles Ferdinand Zorès.*)—"Improvements in the per- "manent way of railways."

The 1st part of the invention relates to the employment of what I term a pedestal rail, consisting of a deep longitudinal girder or sleeper support sunk in the ground, to the top of which is attached the rail in the manner shown in the drawings.

The second part relates to the employment of toothed rails or bars on the inside of the line in combination with the toothed rim of the driving wheel flange of a locomotive for the purpose of facilitating the ascent of steep gradients.

The third part relates to improvements in double headed rails, and in the mode of attaching them to their metallic supports by the aid of a sole plate received on the top of the sleeper rail and clamps hooking into the said support which firmly connect the rail thereto, the whole being united by bolts passing through elongated holes in the rail and support, the nut of which bolt is caused to fix the clamps in position.

The fourth part relates to improvements in Vignole rails, by reducing the width of base and increasing the size of the head as shown in the figures. The rails are further connected to their supports in a similar manner to the above.

The fifth part relates to improvements in Brunel or bridge rails. These consist in increasing the depth of the rail in the manner shown in the drawings and reducing its breadth of base, at same time employing metallic supports in combination with said bridge rails.

Finally, the invention relates to improvements in sleeper rails for the support of the rails of the peculiar form and construction shown in the drawings.

[Printed, 6*s.* 10*d.* Drawings.]

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[*] The word "loss," is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

A.D. 1868, April 6.—Nº 1160.

HOLT, Thomas, and SPENCER, Henry.—(*Provisional protection only.*)—" Improvements in machinery " for spinning and doubling cotton and other fibrous substances."

Our invention relates, 1st, to interposing between the wood bush of the bobbin (in throstle and doubling frames) and the spindle a metallic substance which shall be fastened to the bobbin and revolve with it; by this means the bobbin will last longer and the drag can be easier regulated. Secondly, in throstle and doubling frames we propose to make the guide wires so that the thread or yarn can be placed in front of the same; this wire we bend both to the right and left hand of the shank that is screwed into the wire board; by this means the wire is balanced, and one end of the wire will answer the purpose of a snarl catcher. We also propose in some cases to use a lock nut on the shank of the guide wire to help to fasten it in the wire board. Thirdly, we propose to form the wires in the traverse rods that guide the yarn to the rollers of throstles, doublers, and mules with a long slit for the yarn to pass through, instead of a round hole as generally used.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 6.—Nº 1161.

NEWTON, Alfred Vincent.—(*A communication from Louis Desiré Jeandron-Ferry.*)—" Improvements " in bathing shoes."

The soles of the improved bathing shoe are pierced with holes to allow of water admitted to the shoe readily escaping therefrom, and the perforations are covered with wire gauze to prevent the admission of stones, &c.

[Printed, 8*d.* Drawing.]

A.D. 1868, April 6.—Nº 1162.

NEWTON, Alfred Vincent. — (*A communication from George A. Lloyd and Charles A. Stewart.*)— " Improvements in anchors."

The anchor is fitted with swinging flukes whose movement is limited by stops, which also hold the flukes at different angles to the shank.

[Printed, 6*d.* Drawing.]

A.D. 1868, April 6.—Nº 1163.

CASSON, John.—" Improvements in machinery for planing wood."

The said machinery consists essentially of the following parts:—A disc plane; a fence for holding the wood to be planed; a compound carriage upon which the said fence is mounted, and a horizontal bed on which the said carriage is caused to slide to and fro. The carriage is made in two parts. The lower part slides in the aforesaid bed and carries a vertical pivot on which the upper part can be turned so as to bring the wood obliquely to the cutters when requisite. The fence is furnished with adjustable " dogs " for holding the wood, and is so hinged to the upper part of the carriage as to be capable of being set at any angle within a quarter of a circle to the disc plane for the purpose of planing wood into polygonal forms. When wood has to be planed into a cylindrical, an elliptical, or a conical form, the said wood is caused, as it passes the cutters, to revolve upon centres carried by the fence. The disc plane consists of a revolving disc furnished with roughing and smoothing cutters set at angles to its radial line, and is carried by a head-stock, so worked by means of suitable gearing, that it can be set at any required distance from the fence, such distance being indicated by a revolving dial (worked by the said gearing) and a stationary pointer.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, April 7.—Nº 1164.

WATTEEU, Emile.—" Improvements in screw taps, and in the mode of fixing the same."

This invention consists in forming screw taps with flutes or polygonal sides, or both combined, along their entire length, and driving them by means of such flutes or polygonal sides, the tap being made to travel through the driver, which is for this purpose arranged close to the work, instead of on the upper end of the tap as heretofore. The tap is placed in position from the top of the machine, instead of from the bottom, as before.

[Printed, 10*d.* Drawing.]

A.D. 1868, April 7.—Nº 1165.

HOLIDAY, Richard.—(*Provisional protection only.*)—" Improved means and apparatus for the prevention " of accidents at facing points on railways."

I place two rocking shafts at the junction points, with two projections or stops on each shaft, one stop of each shaft working on the inside of the facing point, and one of each shaft working on the outside of the

int. At the end of each shaft I fix a crank, which is connected to the signal or signal lever.
e signal is lowered, the shaft revolves, bringing one projection or stop between the facing point and
the other on the outside of the point, causing the facing points to be properly closed before the
owered.

d, 4*d*. No Drawings.]

A.D. 1868, April 7.—N° 1166.

RS, Henry James.—(*A communication from Augustus Wilhelms and Johannes Marinus Van der*
" Improvements in apparatus for the consumption of smoke."
vention consists in constructing a chamber containing a double cone suitably supported, the said
omunicating at the lower part with the furnace flue, and the upper part with the chimney. On
f the chimney a sperical wire net or grating is fixed carrying also a double cone. The smoke in
ge from the flue to the chimney becomes decomposed by the intense heat in the chamber, while
nbustible gases pass off by the chimney, the double cone and grating at top preventing any down

ed, 6*d*. Drawing.]

A.D. 1868, April 7.—N° 1167.

Y, Alexander Lyman.—" Improvements in the manufacture of iron and steel."
nprovements relate to casting ingots and masses of metal in moulds filled from the bottom, a
of moulds being placed around a central mould and connected by a flask with runners moulded in
ther moulding material. My improved flask instead of being a mere shell to hold the sand forms
ottom whereon the ingots stand. I make different sized ingots by stopping off the moulds at
heights. For this purpose I form a stopper of a sheet iron plate with edges turned up and fitting
mould. I place this stopper on a post and fill the space above it with loam or sand. A plate is
ged over the top of the mould and the post is removed. The metal poured in the mould will then
as high as the stopper. I sometimes use a cast iron stopper which may be placed at any desired
the mould. I prefer to make this stopper and the post rather less than the mould, and to place
blocks upon the top of the post for the sand or loam to rest upon. The cast iron stopper may
ed with hooked rods or other convenient means for removal or insertion. A taper mould may be
on the flask with its large end upward, and closed with a plate or block. The ingot in this case
me down, but its lower end rises as its shrinks. This method of stopping may be modified by
cast or sheet iron stopper in the mould, the space above being preferably filled with sand or loam.
cases I prefer to form cast iron moulds in the flask for the bottoms of the ingots. Instead of
the distributor or flask by means of separate patterns I form all the patterns on a follow board and
d draw them at one operation. I form the cores which cover the runners, of iron or of any suitable
material. I sometimes arrange the bottoms of the moulds to form the covers for the runners.

d, 1*s*. 2*d*. Drawings.]

A.D. 1868, April 7.—N° 1168.

Villiam.—" An improved apparatus for holding and igniting matches."
d invention consists chiefly in the combination of a box or holder with peculiar devices whereby
ontained in the said box or holder are ejected and ignited automatically and singly as required.
invention also consists in the employment of percussive action, instead of a rubbing or frictional
r igniting the said matches. The said apparatus may be made of any convenient size or shape, and
specially constructed to be carried in the pocket, or may be formed to stand upon a table or desk.
hes are held in a rotating disc or cylinder, and are thereby brought separately in line with a guide-
gh which they are ejected by a spring slide; this slide at the same instant releases a hammer,
ikes the head of the match as it is ejected through the case of the apparatus.

d, 8*d*. Drawing.]

A.D. 1868, April 7.—N° 1169.

, Edwin Henry.—(*A communication from Jacob Heinrich Gustav Lange and Theodor Zeise.*)—
roved boat detaching apparatus."
d invention consists chiefly in the peculiar method and devices for securing the ends of the ropes
the boat is suspended. The said ropes are passed through eyes or rings fixed in the bow and stern
t, and the end of each rope is placed in a clamp which has two movable arms operated by a slide
tical shaft; the latter is fitted to work through a nut, and is provided with a lever or handle
he clamp is operated to hold or release the rope ends. The clamp is placed midway between

the two ends of the boat, and when by the adjustment of its moveable part the ropes are released each of them being loose in its eye or ring sets the boat perfectly free at both ends at the same instant.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 7.—N° 1170.

FISHER, Henry.—(*Provisional protection only.*)—" Improvements in constructing the handles of teapots, " coffee pots, or other vessels intended to contain heated liquids."

This invention consists in a mode of inserting a non-conductor or non-conductors of wood or other suitable material in the handles of vessels intended to contain heated liquids, such as teapots, coffee-pots, kettles, hot water jugs, and so forth, such non-conductor being inserted in such a manner as to prevent the heat from passing from the socket (by which the handle is attached to the vessel) to the handle itself at the same time that it secures the handle [*to the socket without the use of pins**].

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 7.—N° 1171.

SIMPSON, Frederick, and HARDWICK, Samuel.—(*Provisional protection only.*)—" Improvements " in machinery for rolling sheets or plates of iron for the manufacture of tin and terne plates, which improvements may also be used for rolling sheets of iron for other purposes."

According to this invention two pairs of hard or chilled rolls geared together are employed, and the sheets or plates are fed to the said rolls by self acting feeding mechanism driven from the said rolls. The plate to be rolled is placed on a reciprocating sliding feeder in front of the first pair of rolls. By the advance of the feeder the plate is carried between the first pair of rolls, from which rolls it is conducted by means of platforms or ledges and a rotating guide roll between the two pairs of rolls to the second pair of rolls. The plate is thereby reduced in thickness and its surface made bright by the removal of the scale therefrom.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 7.—N° 1172.

SIEMENS, Charles William.—" Improvements in the application of gas furnaces to evaporating, " smelting, puddling, and other manufacturing purposes."

One part of this invention consists in rendering the regenerators of regenerative gas furnaces more accessible for cleansing them from accumulations of dust by arranging them in a horizontal position and constructing passages between them with stoppered apertures in the walls of the regenerators through which clearing tools may be introduced; closed apertures are also provided in the roof of the furnace over the vertical passages from the regenerators for clearing these from dust.

For certain metallurgical operations both pairs of regenerators are made to communicate with one and the same end or side of the the furnace so as to leave the other three sides free, the gas and air being made to enter small mixing chambers before passing into the furnace. The reversing valves to the regenerators are made to turn on vertical spindles, instead of on horizontal ones as heretofore, both valves being actuated by one and the same spindle.

In puddling furnaces, &c., it is preferred to cause the air to enter the furnace above the combustible gas so as to protect the arch from the intense heat.

In making glass on the open bed of regenerative furnaces it is proposed to make the bed of iron plates and the sides of closed iron water troughs through which cold water circulates.

In applying regenerative gas furnaces to the manufacture of soda the regenerators are arranged beneath the roasting hearth in such a manner that a portion of the hot air and gas may be made to pass beneath the evaporating pan to heat the same by their combustion.

For converting the salt cake combustible gas and air are made to enter either a revolving drum or furnace of ordinary construction containing the salt cake and other ingredients, and after entering into combustion the gaseous products are caused to pass into a chamber containing pipes through which the air required for the above combustion is caused to pass and thus to become heated.

The hot gases after depositing their dust in such chamber then pass into an evaporating chamber containing alkaline liquid, whence they pass into a chimney.

For the finishing furnace regenerators are arranged under a long bed, the heated gas and air being made to enter alternately at either end, while the soda ash is also introduced alternately through openings near each end in such a manner that the fresh charge is always introduced at that end which for the time being is the coolest part of the furnace.

In applying regenerative gas furnaces to the burning and enamelling of pottery, &c., and similar process a number of kilns, ovens, or muffles are arranged over and in connection with one and the same set of pairs of regenerators, so that when one or more of the kilns, &c., are cut off therefrom the regenerators are usefully employed in heating the others. The gases may be made to rise from the regenerators either directly into the kilns, or the combustion may take place in passages surrounding such kilns, or the combustion may take place in some of the kilns and the hot products of combustion be made to pass partially into flues surrounding others of the kilns, ovens, or muffles.

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* The words "to the socket without the use of pins," are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

For calcining ores, &c., an arrangement of two regenerators is employed, between which is a passage through which combustible gas rises to a space at the top of the regenerators, where it meets the air passing up through one of the regenerators and enters into combustion therewith, the products of combustion passing down through and heating the other regenerator. The air entering the regenerator is considerably in excess of the quantity required for combustion with the gas, and this excess of heated air is made to pass through apertures in the regenerators provided with slides to the calciner. The action of the regenerators is reversed as usual by a reversing valve.

In applying gas furnaces to the heating of steam and other boilers the gas is conducted through jets into the one end of the boiler flue, annular passages for the introduction of the requisite air being formed round these jets. In the boiler flue rings of fire clay are placed a short distance in front of the gas jets, which becoming highly heated aid in the perfect combustion of the gases. The hot products of combustion after passing through the flues of the boiler are made before escaping up the chimney to heat a series of pipes through which the air required for the combustion passes. Tubes are provided in the centre of the gas jets for introducing a light for igniting the jets in the first instance and for introducing more air if required to aid in the combustion.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, April 7.—N° 1173.

SHERWOOD, Isaac.—(*Provisional protection only.*) —" Improvements in lamps for burning hydro-" carbon oils and spirits."

My invention consists in regulating the flame of the lamp by raising or lowering the tube surrounding the wick instead of the wick itself as usual. This tube is screwed into a collar attached to the lamp, so that on being rotated by the aid of a flange surrounding it, it is raised or lowered, adjusting its upper edge in relation to the wick as desired.

The chimney gallery also screws on to this tube, by which means the chimney may be readily adjusted to obtain a maximum of light by screwing or unscrewing the gallery on the tube, which raises or lowers it as desired. If a globe is used on the lamp in addition to the chimney, I may adapt the flange before mentioned as a gallery for the globe, and make use of it, as before, to rotate the adjustable tube for regulating the flame.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 7.—N° 1174.

LOWNDES, Robert Gillies.—(*Provisional protection only.*)—" Improvements in finishing textile and " other fabrics, and in the machinery or apparatus employed therefor."

The feature of novelty which constitutes this invention is the special arrangement of mechanism to be used for stenting or stretching textile fabrics whereby the edges of the cloth are firmly held by a species of clamp instead of by pins or other means hitherto used.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 7.—N° 1175.

ARMSTRONG, John.—" Improvements in harrows."

This invention relates to an improved mode of arranging and securing or holding together the various parts of harrows without the aid of nuts and screws, and consists in connecting the main zig-zag beams in pairs or sets of two or more by the aid of cross bars disposed at suitable intervals or where a tooth is required, such cross bars having an oblong eye or opening at each end and in intermediate parts of their ngth if required, through which the beams to be connected together are passed. An oblong slot or opening also made vertically through each of the said eyes in the cross bars, and through these oblong slots or openings are inserted the teeth or tines, the whole of the parts, namely, the beam, cross bar, and teeth, being tightened up and held firmly together by wedges or keys driven in alongside the teeth. Any number of pairs or sets of two or more beams connected together by cross bars as above described may be coupled so as to form, say, for example, three four beam harrows or six two beam harrows. The coupling together of the several pairs or sets of connected beams is effected by the aid of peculiar jointed connections consisting each of two bars coupled together by a joint pin and cotter and sliding hoop or ferrule. Each jointed coupling bar is connected to the contiguous main beams at each end by means of rivets, or by a separate clip which is

keyed on to the beam and receives one of the ends of the coupling bar, which are bent at an angle
purpose.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 7.—N° 1176.

McMAHON, Patrick.—(*A communication from Matilda Webb and Charles Gavan Duffy.*)—(*Pro*
protection refused.)—" Destroying the decaying principle in animal substances, and articles of fo
" organic matter by means of a railroad atmospheric process."

According to this Provisional Specification meat or other article of food or other organic m
placed in a receiver, in which atmospheric air or any of the gases of the atmosphere may be con
densified or expanded. Atmospheric air is then conveyed into the receiver, where it is dens
expanded. The meat or other article is then withdrawn by suitable machinery.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 7.—N° 1177.

LANE, Denny.—" Improvements in the manufacture of floor and other cloth or coverings for fl
" in covering floors."

According to this Provisional Specification floorcloths are formed of strips of wood cemented
woven cloth or other flexible material. For covering floors thin strips or veneers of wood are use
are reduced at their corners or other parts for the insertion of nails to fasten them to the floor.
pieces of wood are cemented into the recesses cut in these strips or veneers.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 8.—N° 1178.

SPENCER, Charles Green.—(*Provisional protection refused.*)—" An improved apparatus or mac
" enabling persons to support, raise, and propel themselves in and through the air; which apparatu
" fitted with suitable mechanism and raised, is also self-supporting and self-propelling."

The novelty in this case consists of an apparatus formed with long T-shaped webs and fins, t
being pointed at the fore end near to which the propeller fins are fitted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 8.—N° 1179.

BEDFORD, Joseph.—" Improved means and apparatus for washing and drying grain."

The novelty of this invention consists, firstly, in washing grain by immersing it in a cistern fil
water, and causing it to traverse through the same by means of a screw encased in a perforated ca
secondly, in conveying it from the cistern (also by means of a screw) over a perforated surface t
moisture to drain off to the hopper of the drying apparatus, and there urging it by means of a scre
an open steam jacketed box or boxes of such length or lengths as may be requisite.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, April 8.—N° 1180.

CHAUDUN, Jules Joseph, and DEXANT, Jean Jean.—(*Provisional protection only.*)—" I
" ments in cartridges for breech-loading fire-arms."

This invention consists in constructing the cases of breech-loading cartridges of drawn copper
tubes, made without soldering or brazing, and which may be varnished inside. The rear end of
is bent over a plug, and is then placed in the breech cap, and a lining of sawdust, &c., mixed with gl
matter, is spread round the bottom of the case. For central fire cartridges a hole is made in the b
into which a percussion cap is placed, having a disc of lead inserted over the fulminate, and a T
anvil is inserted into a slit formed in the breech plug.

For pin fire cartridges the fulminate is placed in a flattened tube inserted in a slit in the breech pl
a conically headed pin is inserted from the side of the cap so as to come in contact with the fulminat

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 8.—N° 1181.

JAMES, John, and JONES, Thomas.—" Improvements in the manufacture of iron into semi-
" steel."

This invention consists in submitting wrought iron to the action of gases, such as hydrocarbons, c ides, ammonia, or other nitrogenous compounds, or cyanogen gas, under compression in any suitable gas ht vessel or receiver, to convert it into semi-steel or steel or for the purpose of case hardening it.

[Printed, 4d. No Drawings.]

A.D. 1868, April 8.—N° 1182.

ALMER, George Harding.—“An improved spring brace.”

The novelty consists in the spring for both the hind ends and in the spring of each front double end, being ach made of one piece of metal, caoutchouc, or other material; to each end of each spring is attached a spender; these suspenders pass through moveable rings which are placed on the spring; to the ends of he suspenders button holes or loops are attached. The rings keep the parts into which they are connected proper position, form a stop, and prevent the spring from being injured by a strain, or to the ends of each ring loops with button holes are attached, and which like the rings keep the parts in position, &c., or the nt ends are each made of two pieces of pear shaped and tapering leather or other material, the narrow end each of which piece passes through a loop attached to the brace or brace buckle, and is secured above the tton hole to its fellow piece.

[Printed, 8d. Drawing.]

A.D. 1868, April 8.—N° 1183.

AKE, William Robert.—(*A communication from James Asbury McKean.*)—“Improvements in achinery for cutting and working rocks and other hard substances chiefly designed for mining, tunnelling, and other like operations.”

The said improvements relate to a method of cutting and drilling rocks and other hard substances by the eciprocating action of drilling or cutting implements, each of which is connected with a separate piston orking in a cylinder. My improvements consist in the novel construction of the valve which admits the team or other fluid into the cylinder, and in the peculiar mode of and devices for operating the said valve, n the novel construction and arrangement of the feeding mechanism, in the mode of securing the drill or tting implement, in the feed screw or holder, in the means for more effectually supporting the frame which arries the drill cylinders, and in the employment of a frame of peculiar construction for supporting the achinery to work in a vertical direction. The said improvements also consist in various details of nstruction and arrangement, whereby the machinery is simplified while its efficiency and durability are eatly increased. The valve for admitting the steam or other fluid to the cylinder is a conical plug with pertures and passages so arranged in relation to the ports that by partially turning the valve on its axis the dmission and exhaustion of the steam is properly effected at each stroke of the piston. The turning of the lug is effected by the reciprocating action of the piston rod through the medium of a slotted bar attached the end of the valve rod or spindle. A stud on the piston rod works in the aperture in this slotted bar, hich aperture is parallel at each end and inclined in the centre. This inclined part is acted on by the stud nd thereby partially turned at each stroke of the piston. The feed or advance of the drill is effected by eans of a feed nut with ratchet teeth, carried in a box fixed on the rear end of the piston rod. A pawl ranged to take into these teeth is caused by an inclined guideway to partially rotate the said nut at each ackward stroke of the piston in the proper direction to feed the screw and drill forward. A second pawl xed on the feed box prevents the backward rotation of the nut. The guideway turns with the piston rod, nd is provided with means of adjustment endwise. The weight of the bar in which the guideway is formed s counterbalanced by a weight on the opposite side of the feed box. The drills are formed with a conical r taper portion which is fitted into the end of the feed screw, and a shank or stem is extended from this onical portion to the rear end of the screw, where it is secured by a nut with a differential thread. The raming is provided with telescopic extension pieces, and india rubber buffers or cushions are placed behind hese pieces to prevent their becoming loose from vibration or otherwise. When drilling in a vertical irection the cylinder is secured upon a table having three or more adjustable legs pointed at their lower nds to ensure their holding firmly in the rock or other substance.

[Printed, 1s. 6d. Drawings.]

A.D. 1868, April 8.—N° 1184.

EWTON, William Edward.—(*A communication from Isaac M. Gattman.*)—(*Provisional protection only.*) “Improvements in the manufacture of salts of soda.”

Salt and pulverized chrome iron ore are mixed and heated to redness and subjected to a current of steam form chromate of soda, which may be decomposed and converted into carbonate of soda, which is soluble, hile the sesquioxide of chromium will be insoluble, and may be again converted into chromate of soda by e addition of salt as at first.

[Printed, 4d. No Drawings.]

A.D. 1868, April 8.—N° 1185.

BENINGFIELD, Edward.—(*Provisional protection only.*)—" An improved lifting machine, applicable as " a fire escape, and for repairing and decorating houses and other buildings."

This invention consists of a tripod stand or three long legs hinged to a crown plate, from which is to be suspended a cage when required to adapt the machine as a fire escape or a platform. When required to be used for repairing or decorating buildings each leg may be made in parts so as to double up.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 8.—N° 1186.

HILL, Charles Grey.—" Improvements in the manufacture of fringes and purl and other edgings or " trimmings."

According to this Provisional Specification fringes are formed by winding silk around suitable instruments so that it makes a zig zag band, on to this band near each of its edges a thread or tape is applied longitudinally and caused to adhere; the band is then divided. The mode of operation for forming purl and other edgings or trimmings is very similar to that for forming fringes.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 8.—N° 1187.

GALLET, Victor.—" Improvements in the manufacture of steel."

According to this Provisional Specification iron is coated with a composition and is then heated, and it may afterwards be melted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 8.—N° 1188.

BRASIER, Edward, and HODGKIN, John Eliot.—" Improvements in machinery and processes for " scutching, dressing, cleaning, treating, and preparing flax, hemp, and other vegetable fibrous materials, " and the tow of the same."

This Provisional Specification describes improvements in machinery and processes for scutching, dressing, cleaning, treating, and preparing flax, hemp, and other vegetable fibrous materials, and the tow of the same, and consists, firstly, in an improved arrangement of mechanical parts for imparting a reprocating rolling movement more progressive than retrogressive to rollers intended for crushing and breaking the woody portion known as the " boon " or " shive " of flax, hemp, and other similar fibrous materials.

The second part of the invention relates to improvements in a machine for rolling, cleansing, scutching, and otherwise treating vegetable fibrous materials, for which Letters Patent were granted to one of us, the said Edward Brasier, dated the 3rd day of August 1864, No. 1926, and consists in so arranging the machine, described in the Specification of the Patent above referred to that the progressive and retrogressive movement of the rollers is effected by mechanism similar to that described in the first part of our present improvements.

The third part of the invention relates to certain improvements in the forms of the fluted rollers to be employed for " breaking " or rolling flax or hemp in the machine described in the Specification of the Patent before referred to.

The fourth part of the invention relates to the combination of a scutching wheel with a machine arranged to work in the manner described in the Specification of the Patent above referred to.

The fifth part of the invention consists in exposing the flax straw in a chamber to a " dry heat " before it is submitted to the action of the " beater " and " scutcher." After the fibre is " scutched " it is submitted to the action of a damp atmosphere.

The sixth part of the present invention consists in straightening tow and forming it into coarse strands or yarns preparatory to feeding it into beating or scutching machinery.

[Printed, 1*s*. Drawing.]

A.D. 1868, April 8.—N° 1189.

HUNT, Thomas.—(*Provisional protection only.*)—" Improvements in ordnance, and in the mode of working " the same."

The making in a separate part of only about so much of the breech portion of the gun as will contain the charge and projectile or shot, and the turning of it over vertically upon its trunnions so as to place its front end in about the same position during the cleaning and loading of the gun as that occupied by the breech when the gun is fired.

Supporting the gun upon three pairs of trunnions or two pairs of trunnions and one point of support in front, one pair of trunnions being on fixed or vertically moveable bearings in the gun carriage, and the other pair as well as the point of support having vertical movement upon the gun carriage, but but not working in guides therein, and producing by this means a central or muzzle pivoting gun.

Supporting a gun of the ordinary construction in the same manner as above described, or with only two points of support, and making it a muzzle or central pivoter by the simultaneous action of the before mentioned machinery.

The turning over for about a half of a revolution of the whole of a gun of the ordinary construction, and also the training or aiming of the gun by the means before mentioned.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 8.— N° 1190.

DOUGLAS, Charles.—(*Provisional protection only.*)—" Improvements in cutting the teeth of wheels, and " in apparatus employed therein."

This invention consists mainly in arrangements whereby the cutter for shaping the teeth and the wheel to be cut are made to move simultaneously in such a manner as that one cutter answers for all wheels of the same pitch or distance between the teeth.

For this purpose revolving cutters are used properly notched, which cutters may be either ring shaped or helical, and one or more of such cutters may be employed to act on the same wheel, according to circumstances.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 9.—N° 1191.

CHAPMAN, William.—(*Provisional protection only.*)—" Improved machinery or apparatus for skiving or " chamfering leather and other materials."

A rotating diamond-shaped cutter or blade with an adjustable plate below for regulating the cut. The base plate of the apparatus is furnished with a standard having bearings for the shaft or spindle of the rotating cutter, to which motion is imparted through suitable gearing, and below the cutter is a wheel having its periphery covered by preference with india rubber. Above this wheel is an adjustable plate or foot held in position by means of a spring, so that the material to be operated upon is pressed by the plate or foot against the periphery of the wheel, and by the rotation of the latter is fed to the cutter. Provision is made for skiving or chamfering to the desired angle.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 9.—N° 1192.

FITTER, James. — (*Provisional protection only.*) — " Improvemenls in alarums of the kind known as " detonating alarums."

This invention consist of a short barrel to be charged with gunpowder, the barrel having a nipple on its end, on which nipple a percussion cap is placed, and a hammer or lever pressed towards the nipple by a strong spring. A cross piece having four or other number of arms turns on a bracket carried by the end of the barrel. From the arms of the cross piece wires or chains pass to the doors or windows to be protected. To charge the alarum the hammer is raised and supported by one of the arms of the cross piece, a spring catch taking into a slot in another of the arms, holding the cross piece firmly in its position, and preventing the accidental discharge of the alarum. By removing and keeping back the spring catch the alarum is ready for use. On the wire or wires attached to the cross piece being pulled the hammer is released, when it falls upon the percussion cap and discharges the alarum. The alarum may be fixed on a door or elsewhere by a staple and spring bracket, the arm of the bracket taking into a hole in the framing of the alarum.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 9.—N° 1193.

PLEWS, John.—" Improvements in steam engines."

My improvements consist in making the cylinders of steam engines move or travel upon a fixed piston or fixed pistons, the rod of which form the inlet and eduction pipe or pipes and thereby become the means of communicating motion to the engine in lieu of having the pistons moving or travelling within the cylinders, as heretofore; and my said improvements are applicable to all engines, whether worked by steam alone or in combination with exhaust or atmospheric pressure, or by gas or water.

My improvements also comprise a modification of the above, whereby by substituting a fixed diaphragm in the cylinder for the piston head, and a tube or tubes on which the cylinder slides in lieu of any piston, and which serve as inlet and eduction pipes alternately, the same motion is communicated to the cylinder and the like result obtained.

But I do not limit myself to the above or any individual mode of effecting the same result, which may or must be varied according to the nature of the engine; but what I claim is the application to engines of every or any description of the above mentioned modes of obtaining and communicating motion by causing the cylinder or cylinders to travel in lieu of the piston, as heretofore.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 9.—N° 1194.

RAE, James, and MILLER, George.—" Improvements in the construction of railway wheels, and in " the axles and bearings for the same."

Our improved wheels are constructed with a boss which is fitted to revolve upon the axle instead of being fixed upon the same. A hoop or ring is fitted on the shaft to form the bearing for the wheel, and is fixed with screws which allow it to be turned round upon the shaft as it becomes worn. The lubricating material is kept in the bearing by means of flexible or other bands which cover the joint or division between the boss of the wheel and flanges at each end of the same. The said lubricating material is supplied to the bearing from a reservoir fixed to any convenient part of the carriage, the flow being regulated by a valve. The periphery of the body of the wheel and the inside of the tire are made conical. The tire is formed on one side with a hook flange which fits over a shoulder formed on the wheel body. The other side of the tire is formed with a recess in which is fitted a clip ring also formed to fit over a shoulder on the wheel body. The tire is secured upon the body by bolts passing through the hook flange, the body, and the clip ring. The working faces of the tire are hardened, while the other parts are left in their normal state by causing the tire to revolve in oil, water, or other liquid which is adjusted to immerse only a portion of the tyre. The box of the wheel may be forged solidly upon the axle, and the body of the wheel bolted or otherwise secured to the said boss.

[Printed, 1*s*. Drawing.]

A.D. 1868, April 9.—N° 1195.

STILL, Alfred Henry, and LANE, Denny.—" Improvements in the manufacture of gas."

According to this Provisional Specification small coal is mixed with gas tar and moulded into blocks, from which gas and coke are obtained. The gas tar may be distilled before mixing it with the small coal to separate the naphtha and pitch for sale, using only the creosote for mixing with the coal.

Breeze or peat mould may also be used in a similar manner.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 9.—N° 1196.

ROBINS, William Burnet.—" Improvements in garden engines and other similar hand pumps for " throwing jets of water."

This Provisional Specification describes an improved method of constructing the plunger of a pump, and also an improved method of directing the jet of water from the pump.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 9.—N° 1197.

WHITEHEAD, James Heywood.—" Improvements in apparatus for removing soot from the surfaces of " heating tubes."

According to this Provisional Specification sets of heating tubes are arranged in a smoke box parallel the one to the other. The tubes of each set are placed one above another, and each alternate set is encircled by endless chains carrying scrapers on the exterior and interior. The endless chains are caused to rotate slowly, and the scrapers upon them clean the tubes.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, April 9.—N° 1198.

BOUSFIELD, George Tomlinson.—(*A communication from Benjamin Bee.*)—" Improvements in dies, " and in machinery for cutting dies and taps."

The invention is divided into two parts, the first of which has reference to the construction of screw dies, and the second to the machinery for cutting screw dies and screw taps.

The first part of the invention consists of an excentric screw die constructed with its threads excentric to its axis, and with the cutting edges of its threads nearest to said axis, so that the portions of the threads which follow the cutting edges diverge from the screw that is cut and do not make friction upon it.

The second part of the invention consists of certain combinations of instrumentalities for the purpose of cutting eccentric dies and taps by means of a rotating cutter. These combinations are as follows, viz^{t}.,—

The combination in one machine of a rotating mandril to support the blank die or tap to be cut, a vibrating rotating cutter, cutter arbor inclined to the axis of the blank feed screw for moving the blank (or the cutter), and regulating cam for determining the eccentricity of the screw threads.

Also the combination of the rotating mandril, rotating cutter mounted upon an arbor that is free to move endwise, a cutter guide for guiding the cutter, and a spring for holding the cutter against the cutter guide.

Also the combination of the rotating mandril, cutter arbor, a vibrating tool support to hold the cutter, and a moveable centre block to permit the inclination of the cutter arbor to the axis of the rotating mandril and blank to be varied.

Also the combination of the rotating mandril, rotating cutter, inclined cutter arbor, regulating cam and weight, or its equivalent, to cause the cutter arbor to vibrate in accordance with the form of the regulating cam, and also to prevent the cutter from running into the work.

Also the combination of the rotating cutter, regulating cam, and adjustable mechanism for varying the position of the rotating cutter relatively to the regulating cam.

Also the combination of the regulating cam, vibrating tool support, variable connecting mechanism, and a directing instrument for varying the effective length of said connecting mechanism as required to cause the same protuberence of the regulating cam to move the cutter to different extents at different periods in the operation of cutting the blank.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, April 9.—N° 1199.

LEEMING, John.—" Improvements in looms for weaving."

Firstly, the invention has reference to what are termed pick and pick looms, and to the so arranging and controlling the action of the picking department as to be enabled to give any required number of picks from either side of the loom, either consecutively or alternately, without imparting simultaneous action to both picking arms, or to be able to suppress or withhold the passage of the shuttle altogether for any required number of picks ; this latter method is essential when weaving some designs in what are termed swivel or broche figures.

Secondly, the invention has reference to the peculiar formation of the hook employed in turning over the peg wheel of circular boxes.

Thirdly, the invention has reference to the application of a fork motion to a pick and pick loom of any number of shuttles for so operating upon the weft threads as to permit the ordinary well known fork motion to cause the stoppage of the loom when the weft is either broken or expended, and from whichever side of the loom the shuttle may be thrown.

Fourthly, the invention has reference to the introducing into the same swivel figure more than one color of weft although employing only one series of swivel shuttles, each shuttle containing but one color of weft.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, April 9.—N° 1200.

NEWTON, William Edward.—(*A communication from Hiram Berdan.*)—" Improvements in fire-arms, " and in cartridges for the same."

The cartridge extractor is placed parallel with the hammer, and has an independent motion of its own produced by an inclined piece on its back coming against a fixed pin or stud. The full and half cock notches are made on the underside of a sleeve which encloses the rear end of the firing pin. A patched bullet is combined with a brass cartridge case or shell.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 9.—N° 1201.

WRIGHT, Robert Alfred.—" Improvements in heating structures and articles, and in the mode of and " apparatus for obtaining heat from petroleum and other hydro-carbons, and in apparatus for supplying air " to furnaces."

Glycerine in solution (more or less concentrated if desired) is used in circulation pipes for heating houses, carriages, baths, drying stoves, and other heating purposes, instead of water.

A mode of obtaining heat for heating it, which mode may be applied for other heating purposes, consists in blowing or projecting one or more jets or currents of steam or air (superheated or otherwise) across or over the mouth of a pipe or chamber containing petroleum or other hydrocarbon, which is thereby projected in minute particles or sprays on to fuel, clinkers, or other substance on the grate, bars, or hearth of a furnace, air being also admitted thereto.

Fantail, batwing, or like nozzles are recommended for projecting the steam or air.

Heat or pressure, or both, may be applied to the petroleum or hydro-carbon, and its flow controlled by a valve worked by the steam pressure of the boiler when one is used.

A valve is described for admitting air to this and other furnaces, such valve consisting of a balance plate applied to a fire door, flue, or air passage and working on a sharp edge like the centre of a scale beam, or it may work by rolling pressure on a sharp edge. It has an adjustable weight on it. It opens when the draught through the bars is stopped or nearly so.

The glycerine may be heated by a cone covered with rope or other frictional agent revolving within a cone (being driven by the axle when used in railway carriages).

[Printed, 10*d*. Drawing.]

A.D. 1868, April 9.—N° 1202.

VERSTRAET, Louis.—" Improvements in the means of and apparatus for storing and burning petroleum " and other inflammable oils for heating steam boilers and other purposes."

In order to protect mineral oil reservoirs on board ship from injury by shot I make them with a double casing with a space between to be filled with an incombustible, such as sawdust impregnated with a salt, such as chloride of calcium and then calcined. In this manner the force of the shot will be deadened, or any oil escaping will be at once absorbed.

I carry off any vapors accumulating in the reservoirs by passing the air for the supply of the furnaces over said oils by means of an apparatus consisting of a truncated conical tube open at one end; a current of compressed air is caused to pass through this tube, which is further placed in communication with an air channel for carrying away the vapors as before mentioned, the draft being induced by the forced air current. I produce the combustion of petroleum oils by an arrangement of furnace of this invention. The oil is supplied to a series of long trough like furnaces containing powdered pumicestone, the level being constant, its complete combustion being ensured by the truncated cone apparatus. The water of condensation from the oils is collected and serves to supply the boiler.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, April 11.—N° 1203.

SUTCLIFFE, John.—(*Provisional protection only*.)—" Improvements in outline maps, charts, plans, and " similar other articles for educational purposes."

The invention consists in the production for educational purposes of indelible outlines upon paper, cloth, or other suitable material, having the surface covered or coated with a preparation of lampblack or other substance which will receive markings of slate pencil or chalk, and which markings can be easily rubbed out.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 11.—N° 1204.

MARSDEN, Joseph.—(*Provisional protection only*.)—" Improvements in the construction of beams or " girders, floors, and roofs, for fire-proof buildings."

My invention consists in constructing beams or girders of T or I iron rails united by vertical and diagonal stays or trussed and provided with sheet iron stays and clips fitting on the pillars. The girders support joists of I iron, the ends of which are connected together and to the girders by angle iron brackets.

The floors are made of segment shaped tiles, the edges of which have projections and recesses fitting into each other and form self sustaining shallow arches. The floor may be boarded, or the surface of the concrete may be levelled to form the floor. My improved floors may also be applied to the construction of roofs.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 11.—N° 1205.

MARTIN, Charles, **BARRETT**, William, and **WEBB**, Thomas Stammers.—" Improvements in " the treatment and reduction of titaniferous iron ores for the manufacture of iron, and in the application of " slag or cinder produced in such processes."

This invention chiefly relates to the treatment of ores containing a large per-centage of titanic acid, especially those titaniferous ores called ilmenite. For the reduction of these ores a blast furnace or cupola of any ordinary form is employed, the same being charged in the ordinary manner, and in the following approximate proportions :—Coke or other equivalent fuel, 20 parts; ore (by preference broken into pieces not exceeding two inches square) 50 parts; lime, 3 parts; and of the following substances, namely, silcate of manganese, silicate of iron, silicate of alumina, silicate of lime, or silicate of magnesia, either singly or in combination, 4 parts; or a proportion of such substances or materials as would, when fused, produce the said silicates or some or one of them, the quantity used being varied according to the amount of silicate contained in such substances or materials. Any natural substances containing the required silicates may be employed, but those ores of iron or manganese which contain also silica with or without alumina, lime, or magnesia are preferred. Amongst the artificial substances containing the requisite silicates, the slag from blast or other furnaces may be mentioned. The cinder or slag which results from the smelting of the titaniferous ores is preserved, and will, if mixed with ordinary iron ores in smelting operations, or in remelting common pig iron, or in puddling the same, impart thereto the qualities possessed by the metal produced from the titaniferous ores. Should the quantity of sulphur in the slag be such as to be deleterious to the iron, the complete or partial purification thereof may be effected by taking the slag, by preference in a molten state as it runs from the furnace, and mixing it with such substance or substances as will decompose the sulphur compound or compounds and expel the same, or convert such sulphur or sulphur compound or compounds by oxidation or otherwise into soluble bodies. For these purposes, water, hydrochloric acid, nitric acid, and solutions of chlorine may be used, and also substances containing chlorine, such as chlorides and hypochlorides, either solid or in solution, caustic potash, caustic soda, carbonate of potash, carbonate of soda, nitrates of potash, soda, or ammonia, and also the waste liquor from stills in which chlorine is prepared for the manufacture of bleaching powder.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 11.—N° 1206.

BROOMAN, Clinton Edgcumbe. — (*A communication from Augustin Marion.*) — (*Provisional protection only.*)—" Improvements in photography."

The characteristic features of this invention are, 1, the employment of collodionized pellicle (prepared with collodion and castor oil) to immediately furnish a returned positive proof; 2, the direct production by a single transfer of proofs with charcoal upon albumenized paper; and, 3, coagulating the albumen by steam or boiling water, all as described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 11.—N° 1207.

BAYLIS, Thomas Hutchinson. — (*Provisional protection refused.*) — " Improvements in cribs, cots, " bassinettes, and bedsteads, entitled the patent bed guard."

1. In order to provide security against accidents to children, my invention consists in making a patent bed guard to place over and completely cover the top of a crib, cot, bassinette, or bedstead (usually open) and to fasten it so that the inmates are prevented getting out until released.

2. I either attach the patent bed guard to the crib, cot, bassinette, or bedstead, by hinges, locks, or some other way; or I have it separate, so that it may be put on or taken off at discretion.

3. I make the patent bed guard either of wood, metal, fabrics, or other material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 11.—N° 1208.

WILSON, John Charles.—(*Provisional protection only.*)—" Improvements in hydraulic packing presses."

Constructing hydraulic packing presses with the cylinder at the top instead of at the bottom of the press, supported by the usual four wrought iron columns, in combination with two hollow columns or pipes for enclosing the balanceweights, which also serve as guides for the ram.

Also the combination of the above described press with a simple wooden box for holding the material to be pressed, made in layers which are removed as the ram decends; these layers are fastened at the corners with wedges.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 11.—N° 1209.

NICHOLLS, Richard.—(*Provisional protection only.*)—" Improvements in self-attaching buttons or orna- " ments to be applied to ladies' dresses and such like purposes."

According to this invention, buttons or ornaments for attachment to dresses or other articles are formed with flexible metallic claws which penetrate the fabric and are then turned down to form a fastening.

The head of the button is in the form of a disc or ring of metal or other suitable substance, and is to be covered with velvet, silk, cloth, or other fabrics, so as to present a surface of any fabric, color, or pattern desired.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 11.—N° 1210.

CLARK, George.—"Improvements in the manufacture and production of explosive compounds, and in "apparatus for their manufacture and use."

1. Cleansing and purifying vegetable fibre in powder or particles by extracting and separating from it foreign substances, by treating such powder or particles with high pressure steam solutions of alkalis and acids, and animal charcoal in a close steam tight vessel, as described in § 4 and 5 of the Provisional Specification.

2. The formation of grains of cane or bamboo in the manner described in § 6.

3. The formation of vegetable pulp into grains by the use of a frame having a metallic bottom with holes in it, such holes being closed with wire cloth underneath, as described in § 9.

4. Obtaining uniformity of weight and bulk of grains or particles of wood and other vegetable fibre by ascertaining the weight of given measured quantities of such grains or particles, and mixing those quantities, so as to bring the mixture to an average standard of weight in proportion to bulk, in the manner described in § 10.

5. The mode of producing an explosive compound by mixing pyroxylinised vegetable fibre in powder or a comminuted state with salts of nitre and soluble substances containing carbon and sulphur, or either, in the manner described in § 13, 14, and 15.

6. An apparatus for compressing gunpowder charges by weight, on the plan described in § 16 and 17.

7. The mode of weighing measured charges of gunpowder by means of an apparatus described in § 18.

[Printed, 10*d*. No Drawings.]

A.D. 1868, April 11.—N° 1211.

ARCHEREAU, Henri Adolphe.—(*Provisional protection only*.)—"A new method of obtaining heat "and light, and its various applications, and in apparatus connected therewith."

My invention relates to a new mode of producing and applying light and heat by the mixture of inflammable gases and atmospheric air or other agent employed to assist combustion supplied under pressure, the combustion of said mixtures being effected in various liquid or liquefiable, pulverized, or viscous matters.

The inflammable gases and air or other agent are compressed and mixed together in one or more receivers communicating with burners where the mixed gases are ignited.

In applying these improvements to the melting of metals, the burners are placed in the bottom of a crucible, the jets being ignited will burn under high pressure in the midst of the metal placed in said crucible, and so maintain it in a liquid condition. Pulverulent matters may be treated in an apparatus somewhat similar to a pug mill, in which they are stirred up and thus subjected equally to the action of the ignited jets placed therein.

By igniting a jet within a transparent bell suspended from the gas tube it may be burnt under water for exploring rivers, for instance, or if placed in a closed capacity containing water to produce steam, as in a boiler.

[Printed, 1*s*. Drawings.]

A.D. 1868, April 11.—N° 1212.

HUNTINGTON, Samuel Whitmore.—"A new and useful mode of preparing or veneering paper, cloth, "leather, and other substances."

The invention consists in applying to or veneering sheets of paper, cloth, leather, or other material with very thin sheets or veneers of wood, secured thereto by means of paste, glue, cement, or other adhesive matter.

The material thus produced may be applied to paper or other boxes, trunks, the walls of apartments, and otherwise in the same manner that ordinary paper, cloth, or leather is applied, so as to give the objects the appearance of being veneered with wood or of being composed entirely of wood, the expense being little more than that required for preparing gilt and other expensive papers, while the effect produced is infinitely more desirable and lasting than either of the above.

A second portion of my invention consists in constructing the body of a lamp shade of thin sheets of wood or paper prepared in the manner before described, and lined with mica, the whole being enclosed in a suitable border or frame for purposes both of ornamentation and strength, the mica serving as a reflector-

In this manner a lamp shade may be produced with reflecting powers equal to if not superior to the porcelain or other shades in use at a very small cost and without liability of breakage.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 11.—N° 1213.

WOODCOCK, Alexander.—"An improved mode of and apparatus for suspending pictures."

The invention consists in the use (in place of cord) of corrugated metal bands which serve as racks, up and down which attaching hooks (to carry the pictures) are free to slide, but to which they will hold fast when sustaining a weight.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 11.—N° 1214.

MENNONS, Marc Antoine François.—(*A communication from Cerf Mayer.*)—"Improvements in apparatus for the preparation of carbonated or effervescent beverages."

This invention relates to improvements in apparatus for the preparation of carbonated or effervescent beverages, and consists principally in a peculiar arrangement of the obturator which in the single action apparatus serves as reservoir for the carbonate to be decomposed, and is secured in position by a lever and claw. In the double acting apparatus, the hollow cap is replaced by a reservoir forming the stand containing the gas producing ingredients and communicating with a superposed vessel charged with the liquid to be aerated.

[Printed, 1*s*. 2*d*. Drawing.]

A.D. 1868, April 11.—N° 1215.

DUBOIS, Ernest, and CASPER, Edward.—(*A communication from Onésime de Morgny.*)—"Improvements in wet gas meters."

Our invention relates to gas meters constructed with a reservoir or fountain from which water is supplied to the measuring drum or cylinder in such a manner as to maintain the proper level in the same. The inlet tube is arranged over the compartment which forms the fountain or reservoir. The valve chamber is divided into two parts, and the valve seat is formed on the upper part. The valve is fixed on the rod of the float, which is entirely submerged in the water in the reservoir. The said valve is constructed with its upper part spherical, and its lower part conical, to keep it in a vertical position. The syphon is attached to the lower compartment of the valve chamber, and conducts the gas directly into the measuring drum. The proper level is maintained in the said drum by means of a regulating chamber and an arrangement of pipes, which are provided with apertures communicating with the interior of the said chamber with the measuring drum and the top of the reservoir. As soon as the water begins to sink below its proper level gas is admitted to the top of the reservoir and causes water to flow therfrom into the measuring drum. An overflow tube prevents the rising of the water above its proper level. All of these tubes are made of lead, and are curved so that they will readily yeild and allow the chamber to be adjusted by a regulating screw. By making these tubes of lead I am enabled to dispense with stuffing boxes for the said tube.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 11.—N° 1216.

BARCLAY, Andrew.—"Improvements in apparatus to be used in condensing steam in steam engines, applicable also to other purposes."

The feature of novelty which constitutes this invention is the application to the exhaust pipe or pipes of the engine, of one or more passages terminating in nozzles through which the exhaust steam escapes and mixes with water or other condensing liquid or fluid issuing from one or more other passages or nozzles.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, April 11.—N° 1217.

PATON, George.—(*Provisional protection only.*)—"Improvements in looms for weaving."

The feature of novelty which constitutes this invention is the application of rods and levers for the working of the heddles or healds in weaving operations.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 13.—N° 1218.

MILLS, Benjamin Joseph Barnard.—(*A communication from Achille Serre.*)—"Improvements in bleaching, reviving, and tinting white and colored feathers and silk fabrics and goods."

The articles to be bleached are placed for a short time in a vat or vessel containing benzine or turpentine;

they are then removed and are afterwards washed and dried in the air or under a mild temperature. The goods to be bleached may also be passed into a bath of alcohol having a small quantity of oxalic acid added thereto.

For tinting feathers or silk I also employ a bath of alcohol having the required coloring matter and a small quantity of sulphuric acid added thereto.

For obtaining vivified shades a similar bath is employed, but having no oxalic acid placed therein. The goods are passed rapidly through the baths, and after removal therefrom they are submitted to the action of a current of steam.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 13.—N° 1219.

ROTHERY, Joseph.—" Improvements in machinery or apparatus for getting and hewing coal, stone, and " other minerals, parts of which improvements are applicable to motive power engines."

This invention relates to certain peculiar constructions, arrangements, and combinations of the cylinders, pistons, piston rods, and connecting rods of machinery or apparatus for working or actuating the vibrating picks or cutters employed in getting and hewing coal, stone, and other minerals, whereby an economy of power is obtained, the machine is rendered more steady when in action, and the distance or space between the pick head and the actuating cylinder of the machine is reduced. According to one mode of carrying out my said invention I propose to combine together end to end two cylinders of different diameters open at their outer ends, and each having a piston working therein. These two pistons are both fitted on to the same rod which works through a stuffing box in a stationary division or partition between the two cylinders; the object of the smaller cylinder and piston is to produce the return or back stroke of the pick or cutter, whilst the larger cylinder serves to give the cutting blow or stroke to the said pick or cutter. The connecting rod which transmits motion to the pick axis is partly contained within the actuating cylinder itself, thus economizing space. Two cylinders of the same or different diameters arranged as above described may be used as a motive power engine for various purposes.

According to another modification the outer ends of the two cylinders are closed, the piston rod passing through a stuffing box in the end cover of the smaller cylinder. These two cylinders are open to each other at their inner ends, and are each provided with a separate piston carried on the same piston rod. The steam or compressed air is admitted behind the larger piston to produce the cutting blow, and is then admitted in front of the smaller piston to produce the return stroke of the cutter.

According to another modification the two cylinders are placed side by side, and are closed at the rear end and open at the front end. The piston rods of these two cylinders work in opposite directions, and are connected by connecting rods contained within the cylinders to short lever arms on opposite sides of the pick axis. The two cylinders and the parts in connection therewith are carried on an adjustable bed plate which turns on a vertical pivot on the truck or carriage of the machine in order to allow the pick to work on either side of the machine as required.

[Printed, 3*s*. Drawings.]

A.D. 1868, April 13.—N° 1220.

RIDLEY, Robert, and ROTHERY, Joseph. — (*Provisional protection only.*) — " Improvements in " machinery or apparatus for getting and hewing coal, stone, and other minerals."

This invention relates to certain peculiar arrangements of apparatus for actuating the picks or cutters of coal hewing machines intended to be driven by steam or compressed air, and consists in the employment for that purpose of a quadrant cylinder secured to the framing of a truck or carriage, within which quadrant cylinder a diaphragm or piston reciprocates on an axis, such axis forming the axis of the vibrating pick or cutting tool itself, thereby dispensing with lever arms, connecting rods, and piston rods.

According to another modification the axis of the diaphragm or piston which reciprocates in the quadrant cylinder above referred to is provided with a short lever arm instead of carrying a vibrating pick arm, and this short lever arm is connected by links or otherwise to a transverse cutter bar, which is thus caused to reciprocate longitudinally in suitable guides in lieu of vibrating on an axis. The steam or compressed air is admitted on opposite sides of the vibrating piston in the quadrant cylinder alternately by any suitable arrangement of slide or other valves.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 13.—N° 1221.

SHILLINGTON, Thomas Foulkes.—" Improvements in reaping and mowing machines."

I use either flexible or rigid sickles. In the former case the cutters are attached to a cord or chain which runs horizontally around pulleys at the ends of the finger bar. A tube with a longitudinal slot is placed on each side of the finger bar. The cutters pass along through these slots. When the rigid sickle is used the cutters are attached to a steel bar operated by eccentrics or cranks.

In its forward motion the sickle projects through the fingers, and is drawn back by the eccentrics inside the hollow finger bar. The cutters act in one direction only. The fingers are made with the part above the slot to project above that below the slot, and are made broadest at the middle, tapering or decreasing towards the point and towards the finger bar. The finger bar has a row of fingers on each edge. The main frame is made in two circular parts, one of which is made to revolve upon the other, so that the machine can be reversed to cut the crop either at the right or left hand. The two parts of the frame are locked and released by a device under the control of the driver. I use an openwork tilting platform, part of which is made flexible and attached to the rigid part and to a wooden shaft hinged to the finger bar in such a manner that it cannot touch the ground. When enough of the crop has been collected the platform is allowed to fall, and the flexible part forms an inclined plane whereby the cut crop is deposited on the ground.

[Printed, 1s. 6d. Drawings.]

A.D. 1868, April 13.—N° 1222.

FORSTER, Thomas.—" Improvements in the manufacture of compounds of india rubber, gutta percha, " balata, parkesine, solid paraffin or vegetable oils and vegetable fibre."

This Provisional Specification describes reducing vegetable fibre to a fine powder resembling flour, and then mixing it with india rubber, gutta percha, balata, parkesine, or with solid paraffin or vegetable oils. The fibre is disintegrated and reduced to powder by the aid of acid and heat.

[Printed, 8d. Drawing.]

A.D. 1868, April 13.—N° 1223.

DONISTHORPE, George Edmund.—(*Provisional protection only.*)—" Improvements in apparatus for " getting coal and other minerals."

This Provisional Specification describes using a lever pick in combination with a rectilinear reciprocating pick, the lever pick being used to make smooth and even the bottom of the groove formed by the rectilinear reciprocating pick, and also to undercut each slice or strip of coal before it is cut off by such reciprocating pick. The lever arm of the lever pick carries a plate which is to receive upon it the pieces of coal or mineral as they are cut away, and to carry them back out of the groove, or the arm itself is caused to sweep back the pieces out of the groove.

The Specification also describes employing a similar arrangement for simply carrying back the cut off pieces of coal or mineral out of the groove; also applying a similar plate to the arm of a lever pick.

[Printed, 4d. No Drawings.]

A.D. 1868, April 13.—N° 1224.

RICHARDSON, Edward.—(*Provisional protection only.*)—" Improvements in stays or corsets."

This Provisional Specification describes forming open or porous corsets or stays. The sheaths for the stiffeners are formed of a cotton, linen, woollen, or silken fabric, and they are combined together by means of gussets or shaped pieces of horsehair fabric.

[Printed, 4d. No Drawings.]

A.D. 1868, April 13.—N° 1225.

COOMBE, John.—(*Provisional protection only.*)—" Improvements in breaking, spreading, and drawing " flax and other fibrous substances, and in machinery to be used in carrying out such improvements."

This Provisional Specification describes breaking flax or other fibrous substances in an angular or diagonal direction across the breadth of the strick instead of square across it as hitherto.

Also apparatus for effecting this.

Secondly, laying such stricks successively one over another on the feed sheets of the ordinary spreader frames at regular intervals with the angular or diagonal end broken as described foremost Also means of ensuring the ends of the stricks being pressed in among the gill pins.

Thirdly, a new arrangement of spreading and drawing frame.

[Printed, 4d. No Drawings.]

A.D. 1868, April 14.—N° 1226.

HARGROVE, Charles, and **HARGROVE**, Samuel, junior.—(*Provisional protection only.*)—" An im- " provement in the manufacture of breech-loading actions."

This invention consists in the more efficient preservation of the Snider and other breech loading actions.

This is effected by the electro deposition of platinum or other suitable material that cannot oxidise as a coating upon the steel spiral and other springs, and to such other parts that in use are found to foul or rust and thereby impede or prevent the perfect action.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 14.—N° 1227.

SMITH, Thomas, WOOD, Thomas, and DON, Thomas. — " Improvements in manufacturing wheat " and other grain into meal and flour, and in machinery and appliances for that purpose."

This invention consists of two conical shaped screens and chambers in machinery employed for cleaning, screening, and decorticating wheat and other grain; also in adapting a revolving table, inside mill stone cases and scrapers, at the top and bottom sides of the said table for discharging the stive; also a spout for carrying away the stive from the meal spout; also in adapting a single conical branstripper to flour machines.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, April 14.—N° 1228.

FODEN, Edwin.—(*Provisional protection only*.)—" Certain improvements in apparatus to be employed " for mowing and reaping."

The novelty of the invention consists in the novel application, employment, and use of an endless chain flexible plate or band passing round two revolving pulleys or wheels, one at each side of the front of the machine, to which chain or band such angular knives as are ordinarily used for the purpose are attached, and so acting against the ordinary fork as to cut the material opposed thereto. Or two rows or series of chains and cutters may be arranged one above another and similarly actuated, but moving in opposite directions.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 14.—N° 1229.

BRAHAM, Abraham, and BRAHAM, Lewis.—" Certain improvements in the manufacture of hats or " coverings for the head, called sou'-westers.

The novelty of the invention consists in manufacturing such descriptions of hats or coverings for the head, called " sou'-westers," of one entire piece.

The woven fabric is first attached to the flannel lining by glue or cement, and a piece sufficiently large is held tightly and stretched and pulled out by two operatives whilst it is being pressed into form by the pressing blocks; the outside canvas or woven fabric is then painted or waterproofed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 14.—N° 1230.

VAUGHAN, Edward Primerose Howard. — (*A communication from Felix Mattei.*)—(*Provisional protection only.*)—" Improvements in the manufacture of ceramic tesseræ, and in the employment thereof for " mural and other decorative purposes."

An outline copy of the design is transferred to a horizontal flooring by means of tracing paper or some other analogous method, the division of the tesseræ being studied so that the joints between them shall coincide with the outlines of the drawing. The contour of each tessera is transferred to a moveable board, and a border of plaster of Paris raised around the same, thus forming the mould for the clay tesseræ. The tesseræ are dried and baked, the front surfaces and the edges ground smooth and to precision; they are then glazed and fired, then painted and fired, and ground to their true contour so as to fit precisely.

In order to obtain precision of contour the following method is adopted:—Supposing that the contour common to two tesseræ 1 and 2 has been transferred on the tessera 1 from the floor drawing and then ground, a small chamber is formed on a flat board with three battens, having for its fourth side the ground contour of the tessera 1, on which it must fit with the tessera 2. Liquid plaster of Paris is then poured in, and when the same is solid the edge of the plaster mould in contact with the tessera 1 will be of exactly the form to be given to the corresponding part of the tessera 2. This form is then transferred from the plaster mould to the tessera 2 by means of a suitable tool.

The tesseræ are fixed either on the usual mortar coating or on bitumen cement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 14.—N° 1231.

JOHNSON, John Henry.—(*A communication from Charles White Hubbard.*)—(*Provisional protection only.*) —" Improvements in saw handles, and in securing the same to saw blades."

his invention consists in making a saw blade with a slot in the rear end, which slot in form and size esponds to the form and size of a bolt carried in the handle, one end of which bolt is provided with w threads, to which is fitted a screw nut placed in a recess made in the saw handle. The back end of the blade is fitted into a groove made in the front end of the handle. The part of the handle which is sped by the hand of the operator is formed of wood and is secured to the metal part by means of screws rivets. When applying the handle to the blade, the bolt is turned so that its head will be in such a position to enter the slot in the saw blade, the back end of which blade is placed in a groove in the metal part of handle. The bolt is then turned so that its head will be locked in the slot, and the nut is turned by any itable means until it and the bolt has drawn the handle and saw blade firmly and securely together. It is bvious that the improved saw handle may be made of metal or wood or of metal and wood combined.

[Printed, 4d. No Drawings.]

A.D. 1868, April 14.—N° 1232.

HUGHES, Hesketh.—(*Provisional protection only.*)—" Improvements in the manufacture of 'pipings' " and 'folds' or 'plis' of satin or other material."

The strips of satin are cut narrower than usual, and wider strips of muslin have their edges folded over the edges of the satin; the two strips are then stitched together near the edges of the satin. The edges of muslin are then turned back and the two strips are rolled or folded together, the muslin being at the back, and they are then stitched. Guides are used to fold the muslin over the satin and to roll or fold the silk and muslin in pipings or folds.

[Printed, 4d. No Drawings.]

A.D. 1868, April 14.—N° 1233.

BOULTON, Matthew Piers Watt.—" Improvements in apparatus for receiving motion or energy from " fluids and for imparting it to them, and in apparatus to be used for propulsion or in connection " therewith."

Constructing turbines or instruments of that nature in which a portion of the guiding channels used in ordinary turbines is dispensed with.

Causing the stream created by propellers to pass through a gradually expanded channel, so that it is discharged at a reduced velocity.

Arranging particular forms of propellers and reversing their action.

Giving rotation to propellers by means of turbines worked by water forced by the engine power.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, April 14.—N° 1234.

BLACKBURN, Bewicke, and BLACKBURN, Alexander Bewicke.—(*Provisional protection only.*)— " Improvements in rafts or stages to carry passengers, merchandize, articles, and things at sea and other " navigable places, and in the means of propelling the same."

Consisting of a platform or structure supported above the water level upon three or more pontoons or vessels, provided with the means of propulsion, by girders attached to the pontoons by hinged joints at that portion of the pontoon where the motion is least in such a way as to give the minimum of motion at the platform.

[Printed, 4d. No Drawings.]

A.D. 1868, April 15.—N° 1235.

WATTS, William.—(*Provisional protection only.*)—" Improvements in mangles."

The nature of the said invention consists chiefly in the novel means for giving to the moving part of the mangle a reciprocating or to and fro movement upon its bed, and also in peculiar devices whereby the tipping of the said moving part at either end, to allow the rollers to be put in place and removed, is readily and conveniently effected.

The moving part or box is provided with a stud or finger which is fixed on the end of a vibrating lever or in a vertical groove. The said stud is connected to a catch on one of the links of an endless chain, which is arranged to travel over pulleys at the side of the mangle. As the said link passes above or below the pulleys the moving box of the mangle is caused to travel in opposite directions. The tipping of the said box is effected by means of pawls or catches pivotted on the top of the bed or frame, the said pawls being so formed and arranged that when a stud or arm on the box is brought into contact with them they will rise on their pivots and raise the box from the roller at either end. To readjust the box upon the rollers it is only necessary to press the pawl down by hand.

[Printed, 4d. No Drawings.]

A.D. 1868, April 15.—N° 1236.

NEWTON, Alfred Vincent.—(*A communication from Herman Funke.*)—"Improvements in breech "loading fire arms."

In this arm all the lock mechanism except the trigger, viz., the firing pin, the main spring, and the sear, are contained within the breech block, which is hinged to the frame or breech piece.

[Printed, 8*d.* Drawing.]

A.D. 1868, April 15.—N° 1237.

GLOVER, George.—(*A communication from M. Michel Van Der Weyde.*)—"Certain improvements "in the arrangement and construction of submerged or subaqueous lamps, and in the fluid used in and "adapted to such lamps."

These improvements relate to and consist in the employment of certain hydro carbonaceous fluids either seperately or in combination to produce light in lamps, especially adapted to submerged lanterns, and also in the arrangement and construction of these lamps to burn such fluids, thereby producing perfect combustion, and emitting the greatest amount of light, thus doing away with the objections and defects consequent on the use of "*oil burners*" in lamps for submerged lanterns.

[Printed, 10*d.* Drawings.]

A.D. 1868, April 15.—N° 1238.

PAGE, Edward.—"Improvements in fixing the tines of harrows and other agricultural implements."

The invention relates to fixing the tines by passing their stems through holes formed for them in sockets, each of which is in the case of harrows formed in part of an angular form to rest in the angle formed by [illegible] meeting or crossing of the diagonal bars, the other part of each socket passes back over, and is secured [illegible] screw bolt or otherwise to the crossing or junction of the diagonals.

The parts of the sockets, in place of being angular, may be of other form adapted to the form against which they rest.

[Printed, 10*d.* Drawing.]

A.D. 1868, April 15.—N° 1239.

FLETCHER, William Sanderson.—"Improvements in machinery for combing or dressing silk [illegible] "china grass, cotton, and other fibrous substances."

This invention relates to the machinery patented by John Smith, on the 7th September 1867, N° [illegible] and consists in an improved feed motion for delivering the fibrous substances to the nipping jaws or holders, also in conveying the fibres between two pairs of card belts or other equivalents which act simultaneously on both sides and successively on both ends of the tuft.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, April 15.—N° 1240.

OXLAND, Robert.—"Improvements in the treatment of ores and minerals containing copper to extract "copper therefrom."

This Provisional Specification describes the extracting copper from ores and minerals by calcining the ore and then grinding to a fine powder. With this powder is mixed muriatic acid or a solution of chloride of iron with other metallic chlorides. The mixture is slowly dried to a dull red heat, till all volatile matters are evolved. The charge drawn from the furnace is lixiviated while hot with boiling water, acidulated with muriatic acid till all the copper is extracted, which is afterwards precipitated from the solution by iron.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 15.—N° 1241.

WARD, Robert.—(*Provisional protection only.*)—"Improvements in machinery for spinning or twisting "tobacco."

This Provisional Specification describes running the tobacco on to the reel in the roll form as required for sale, in place of the present methods of running the tobacco on to the reel to be afterwards taken off and formed into rolls. For this purpose such an arrangement of the ends and spindle of the reel and of the other parts of the machine is employed as will permit of the roll being taken from the machine without its being necessary to resort to the second process of rolling, as now required. The specification also describes modes of oiling tobacco; also, modes of arranging the spinning machines so that they may be under the more immediate control of the spinner.

[Printed, 4*d.* Woodcut.]

A.D. 1868, April 15.—N° 1242.

obert.—“ Improvements in the construction of horse rakes.”
ention relates to a novel arrangement of parts whereby, when the rake is full of collected material,
of the horse is employed to raise the tines and liberate the material.
, 8d. Drawing.]

A.D. 1868, April 16.—N° 1243.

Francis Augustine.—(*Provisional protection only.*)—“ An improved machine for planting
.”
tures of novelty in this invention consist of improved mechanical arrangements for lifting the
ut of a box by an endless chain with cups or spikes, and letting them drop through a funnel into
beneath at regular intervals during the advance of the machine along the furrow.
, 4d. No Drawings.]

A.D. 1868, April 16.—N° 1244.

Charles.—(*Provisional protection only.*)—“ An improved mode of, and means for, propelling or
ng carriages and goods trucks on locomotive railways, and especially at railway stations.”
elty consists in—
ing carriages on locomotive railways by means of a cog wheel fixed on the axles of the carriages,
wheels into which a pinion gears, said pinion being worked by means of a lever or handle by
ead of horse power.
, 4d. No Drawings.]

A.D. 1868, April 16.—N° 1245.

, John, and KAY, Albert.—(*Provisional protection refused.*—“ Improvements in the manu-
of paper.”
t of the bottom couch roller is placed a box in which is a thoroughfare; pipes are attached to the
g to fans or the chimney so as to create a vacuum or draught in the box, causing the paper to be
rawn from the endless wire belt from which it is taken forward to the drying cylinders by the wet

uum or draught is regulated by valves placed in the pipes.
d, 4d. No Drawings.]

A.D. 1868, April 16.—N° 1246.

N, Edward Aikman.—(*Provisional protection only.*)—“ Improvements in the manufacture of the
ngs employed in spinning, twisting, and thread-making machines of the class commonly known
and traveller throstles.”
a ring mould in two parts, an external and internal, the moulds being of iron, steel, or other hard
material. The external I make in two or more portions so as to be separated from the ring without
t. The internal I make a ram capable of vertical motion. I pour a portion of molten glass into
nal mould and thrust in the ram upon it when the ring is completed.
ve any excrescences or superfluous metal before or after annealing, and polish the working surface.
d, 4d. No Drawings.]

A.D. 1868, April 16.—N° 1247.

DER, William.—(*Provisional protection only.*)—“ Improvements in apparatus for filling
ges.”
nproved apparatus comprises a circular table or holder, with receptacles for the cartridges disposed
This table is moved round step by step, and brings each cartridge in succession under a first tube
g, from which it receives its supply of powder; next under a second tube, from which it receives a
n under a third tube, from which it receives a ball, if balls are used; next under a fourth tube,
ich it receives the shot, if shot are used; and then under a fifth tube, from which it receives a
ad. The cartridge is afterwards carried under a burnisher or closer, which turns in or closes the edge
rtridge over the contents, and the finished cartridge is finally pushed down through and away from
by a plunger or piston. The cartridges may be inserted in the table receptacles by hand from
they may be pushed up into them by a piston or plunger, being put in the way thereof by hand
wise.
ed, 4d. No Drawings.]

A.D. 1868, April 16.—N° 1248.

WEIR, Rankin, and GRAY, James.—" Improvements in furnaces for burning oil."

This invention has for its object the burning of oil in furnaces in a satisfactory, efficient, and economical manner; and it consists in feeding the oil from below into a layer or mass of porous or loose materials, on the surface of which it burns with the aid of air currents or jets induced by steam or otherwise. It is also intended to use water, which is to be thrown upon the flames in minute jets or in the form of spray.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 16.—N° 1249.

EVANS, Henry Sugden.—" Improvements in taps, valves, or apparatus for measuring and registering " the quantity of liquid passed therethrough."

For this purpose a two way tap, cock, or valve is employed, the two ways opening alternately at right angles to each other, and thereby effecting at one time a communication between the cask or vessel and a measuring chamber, and at another time shutting off the communication from the cask or other vessel and allowing the liquid in the measuring chamber to run off into any desired receiver.

The measuring chamber has working therein a plunger which is connected by a link to a lever handle or other means fixed on the axis of the two way cock, and is operated in such manner that directly the communication between the cask or other vessel and the measuring chamber is opened the plunger begins to ascend and allows the measuring chamber to become filled, then directly the position of the two way cock is reversed for emptying the measuring chamber the plunger begins to descend and thereby forces out the liquid contained therein. By employing suitable dials and a train of gearing set in motion by any suitable part of the apparatus the number of times the measuring chamber has been filled and emptied can be readily ascertained.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 16.—N° 1250.

JOHNSON, John Henry. — (*A communication from John Johnson.*) — " Improvements in heating and " ventilating, and in apparatus employed therein."

This invention has for its object the radiation, diffusion, and distribution of heat either in the apartment in which the apparatus is situate or in places remote from the fire, and consists in the use of a small proportion of liquid or vaporizable material enclosed within an air-tight cylinder, vessel, or pipe having a large steam space as compared with the volumn of the liquid, the radiating and condensing surfaces of the apparatus being so placed that all the water of condensation shall be returned to the generator to be again converted into steam. It is also proposed to cause steam to circulate through endless pipes or coils having no openings, such pipes or coils containing only a very small quantity of liquid in proportion to the capacity of the pipe in a bend or coil of the pipe. One branch of this pipe must be so placed or inclined as to ensure the free return of the water of condensation to the coil or generator. The proportion of liquid to the cubical contents of the vessel or pipe which has been found to answer well in practice is about two cubic inches of liquid to one cubic foot of space in the steam chamber or pipe.

This system of heating is applicable to culinary purposes as well as to warming and ventilating apartments.

[Printed, 1*s*. Drawing.]

A.D. 1868, April 16.—N° 1251.

ROBINSON, John.—" Improvements in the manufacture of paint."

According to this Provisional Specification finely powdered slate is ground with linseed or other oil, boiled oil, varnish bottoms, and litharge, or sulphate of manganese or other drier, or with some of these materials. Slates of different colors may be selected. Other pigments may be added.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 17.—N° 1252.

FAIRBURN, Henry George.—" Improvements in portable machinery for turning, screw-cutting, boring, " and slotting; also for cutting off tubes or solid bars into any required lengths."

My invention consists of a central hollow mandrill or tube (secured to the object to be operated upon or the object may be detached), which is encased within another cylinder fitted with a cutter or cutters, and made to revolve, and is also provided with an adjustable feed motion.

ad of revolving it can have a reciprocating motion (or combination), acting as a slotting or planing
.

ad of a hollow mandrill I sometimes use a solid bar, which carries the cutter (or cutters), and the
be operated upon is secured to the same framework.

ted, 10*d*. Drawing.]

A.D. 1868, April 17.—N° 1253.

NS, Charles William.—(*A communication from Werner Siemens.*)—" Improvements in electrical atus for transmitting signals and for ascertaining the distance of objects, as also in instruments yed in connection with such signalling apparatus."

part of this invention has reference to an improved mode of preparing perforated strips of paper for ng, whereby they are made, with the aid of short contrary currents, to effect the printing of letters ols according to the Morse system. For this purpose the paper strip first has a series of equidistant unched along the centre thereof for the purpose of guiding it securely in the subsequent perforating nting processes. It then has the printing holes punched into it, consisting of two holes for each tary sign of a letter, such holes being situated half the distance of the guiding holes apart for forming and one and a half times that distance for forming a dash, the first hole being in each case made to nce the sign by the aid of a positive current, while the last is made to end it by the passage of a e current.

unching these printing holes two kinds of instruments are used, one of which effects the punching pair of holes for every sign consecutively by means of a handle actuating two levers, one of which s two punches for forming the holes for a dot, while the other acts upon two punches for forming s for a dash. The handle also actuates a third lever, which causes the paper strip to be moved depressing the punches. In the second instrument a series of finger keys are each marked with a symbol of the Morse alphabet, and they are so arranged in connection with a series of punches that essing one of the keys the punches for forming all the holes required for the corresponding letter are l simultaneously. For this purpose the keys are connected to a series of levers which in being raised lepression of a key raise a certain number of rods into a position opposite the ends of the punches l to be actuated, and these rods are then pushed forward against the punches by the revolution of a to which they are connected by two excentrics, and which is set in motion by being brought into means of a clutch arrangement with a driving shaft actuated by a treadle or otherwise, the spindle rown out of gear again at the end of one revolution. The paper strip is shifted after every perforation roller, over which the strip passes, the pins being made to enter the central perforations, which roller tion imparted to it by a pawl actuated by a lever, which itself is actuated by studs on the rods working ches, and also by a separate rod, so as to shift the paper to any required extent without working the s.

ransmitting apparatus consists of a cylindrical " Siemen's " armature, with longitudinal coil revolving a row of permanent magnets, and receiving motion through gearing from a spindle carrying an d pin roller, over which the perforated paper is made to pass. The axis of the armature carries a cam actuating a lever in such a manner that a metal spring is made to enter every printing hole in er as it passes over the roller, and to make contact with the latter. This is connected to the one end armature coil, while the metal spring is connected to the line wire, and the other end of the re coil is put to earth, whereby the currents generated in the armature coil are transmitted through the e whenever the spring makes contact through a hole in the paper, these currents being so arranged ly to the holes in the paper strip that the printing of the signs is correctly effected thereby at the ng instrument. In place of the metal spring a fine wire brush may be used.

ry currents may be substituted for the magneto electric currents, either by dividing the pin roller at ngles to its axis into two parts insulated from each other and fitting with vandyked meeting edges h other, one part of which roller is in connection with one pole of the battery and the other part with er pole, while the middle element of the battery is put to earth; or the pin roller may be constructed e, and short contrary currents passed through the same by a commutator worked by clock work.

ecording instrument the cores of the electro magnets are made of flat sheet metal plates instead of before, and the inking roller is made of aluminium.

her part of the invention relates to apparatus for measuring the distance of objects by means of an current, in which two telescopes situated a known distance apart are both directed upon the object ance of which is to be measured, while an electric current passing along a wire connecting the two f observation is made to place a pointer at the one station parallel with the telescope at the other station, so that by the triangle formed between the pointer, the second telescope, and the straight line connecting the two stations, the distance of the object may be determined.

One improvement consists in actuating the pointer by means of a planet wheel in gear with two other wheels worked alternately in reverse directions by the electric current.

Another improvement consists in working the pointer by magneto electric apparatus, the revolution of the armature of which in one direction or the other causes the motion of the pointer in the one direction or the other.

Another improvement consists in employing in place of the pointer a mirror turned by the magneto electric currents, in which mirror is reflected the image of a scale moved by the currents in such relation to the telescope at the second station that, on looking through the first telescope, the distance of the object observed may be read off directly on the reflected image of the scale.

[Printed, 5*s*. Drawings.]

A.D. 1868, April 17.—N° 1254.

KITTOE, George Dominicus, and BROTHERHOOD, Peter.—" Improved apparatus for refrigerating or cooling worts and other liquids."

There is a casing containing tiers or rows of pipes, tubes, or passages communicating with each other, and the casing is provided with plates or divisions which divide it into a series of chambers communicating with each other at their respective ends alternately, so that cold fluid contained therein may be caused to circulate or flow by the action of pumps or otherwise along the entire series of chambers in a contrary direction to the hot liquid circulating in the pipes, tubes, or passages, so that the former, meeting the latter, abstracts the heat therefrom.

On opening or removing a door or cover, or doors or covers, the ends of the pipes, tubes, or passages are exposed ready for cleaning.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 17.—N° 1255.

ROBINSON, Henry Oliver.—" An improved screw propeller."

The feature of novelty which constitutes this invention is the construction of screw propellers in such manner that whilst the vessel is under steam the whole efficiency of the propeller is employed in propulsion and whilst under sail the blades of the propeller fold together upon one another, thus reducing the retarding effect to a minimum.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 17.—N° 1256.

GORMAN, William.—" Improvements in the manufacture of iron and steel, and in apparatus therefor."

One part of the invention relates to the manufacturing of iron and steel from ores, and another part is the manufacturing of the same metals from the slag cinder or refuse ordinarily produced in refining crude or cast iron, and in making malleable iron.

The first part of the invention consists principally in maintaining coke between the blast and the reduced iron in order to prevent reoxydation, and in a mode of constructing the furnace with that view. The second part of the invention consists in projecting a carbonaceous blast into fused slag, cinder, or furnace refuse rich in ferric oxides, in order to reduce the iron, also in using the carbonaceous blast for treating crude or cast iron and Bessemer iron.

[Printed, 1*s*. Drawing.]

A.D. 1868, April 17.—N° 1257.

SMITH, Dillwyn.—(*A communication from George P. Hunt.*)—(*Provisional protection only.*)—" An improved mode of securing tubes in steam boilers and other vessels."

The nature of the said invention consists in fitting the end of the tube in a ferrule which is constructed and screwed into the tube plate in such a manner that it can be readily unscrewed to allow the tube to be removed when required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 17.—N° 1258.

GEDGE, William Edward.—(*A communication from Pierre Rondel.*)—(*Provisional protection only.*)—" A new chemical product applicable to the electrical pile and to other uses."

This new chemical product is obtained by the reaction of a mixture of chlorate of potash and chlorhydric acid on mercury. The immediate result is a chlorhydrate of a double chloride of mercury and potassium. When the reaction is over this salt is obtained at about 95 degrees " Fahrenheit," in a mass composed of atic needles imprisoning between them a coloured liquid, which is a solution of the salt in an chlorhydric acid.

w product has been tried, either disengaged or not from chlorhydric acid with every form of pile, ithout porous vase, charcoal, and zinc, or platina and zinc, and a very constant and close current btained.

w product is not only applicable to the galvanic pile, but by heating to a not very high tempe- leploys into mercuric chloride or corrosive sublimate which is gathered in the upper part of the l a chloride of potassium which remains at the bottom of the apparatus, and which may again be ack to the state of chlorate of potash by well known means; it may therefore serve as a new preparing corrosive sublimate, or mercuric chloride, and of calomel or mercurous chloride.

l, 4*d*. No Drawings.]

A.D. 1868, April 17.—N° 1259.

William Edward.—(*A communication from Louis Leclerc.*)—" A novel apparatus for putting ad shoes on the feet."

vention consists in the arrangement of a back and front shoeing-horn, the front one fixed to a rack g to and fro, and the back one to two rods connected at their lower ends to a lever also acting on shoeing-horn.

ot or shoe is placed on a board raised by a sliding wedge to suit the height of the boot, the back orn coming against the inside of the heel of the boot, and the front one against the inside of the r or instep. A crank is turned and the rack to which the fore horn is attached, traversing in its tches the boot so that the foot can be easily introduced, when the shoeing-horns are immediately by depressing one end of the lever or by pulling on the rods to which the back shoeing-horn l.

l, 8*d*. Drawings.]

A.D. 1868, April 17.—N° 1260.

Francis.—" Improvements in breech-loading fire-arms."

ovisional Specification describes constructing breech loading fire arms adapted to receive cartridges eir priming at their base or rear end, with a coiled spring in such manner that it serves both to ward the striker which explodes the priming, and also as the spring for the sear or catch by which riker is retained until the moment of firing. Other improvements in breech loaders are also set

l, 1*s*. 4*d*. Drawings.]

A.D. 1868, April 17.—N° 1261.

E, James.—" An improvement in the manufacture of breech-loading fire-arms."

vention relates to an improvement in the manufacture of that class of breech loaders commonly ak-down guns, the object being so to secure the "lump" to the barrels as to avoid the possibility ts arising from its getting loose.

d, 6*d*. Drawing.]

A.D. 1868, April 17.—N° 1262.

N, Alfred Vincent.—(*A communication from John Marcus Boorman.*)—" Improved machinery ering hay and other crops from the ground."

ngement of mechanism (which may be rocked into and out of action) for gathering hay and other from the ground and transferring the same to the vehicle employed to convey it to the place of deposit.

d, 8*d*. Drawing.]

A.D. 1868, April 17.—N° 1263.

Astley Paston, and WANKLYN, James Alfred.—" Improvements in the preparation and nœsthetics."

o protoxide of nitrogen (laughing gas) when intended for anœsthetical purposes has been prepared d in the ordinary gaseous form, which has necessitated either the immediate preparation of that gas inity where it had to be administered or the conveyance of the same in bulky gas holders or incon- cipients. Now our invention relates to the preparation of the protoxide of nitrogen (or laughing ch a form and in such combination as that it may be more easy of transport and of storage, and nore easily available and more convenient for administration when required, and consists, 1°, in effecting the condensation of the protoxide of nitrogen (or laughing gas) by means of pressure in a suitable vessel or recipient such as an iron or other vessel of the required strength.

2°. In effecting increased solution of the protoxide of nitrogen (or laughing gas) in solvents thereof by means of pressure, such solvents being contained in vessels capable of being closed and of withstanding the required degree of pressure.

3°. In effecting the solution of the protoxide of nitrogen (or laughing gas) by means of pressure in such anœsthetical agents, such as for instance in ether or chloroform or others, which are solvents of the said before mentioned gas.

Our invention further relates to the employment and use of the compressed gas per se, and of the solutions above referred to which have been effected under pressure for anœsthetical purposes.

When such compressed gas or solutions of the same which have been effected and which exist under pressure are to be employed for anœsthetical purposes, the bottles or vessels containing the same being furnished with suitable cocks or taps, the gas or gas and vapour may if required be transferred to other recipients for administration, or administration may be practised direct from the original vessel or container.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 18.—N° 1264.

BRADFORD, Thomas.—" Certain improvements in machinery or apparatus to be employed for churning, " which is also applicable for washing textile fabrics and mixing liquids."

The novelty of the invention consists in the construction, combination, and use of an outer vessel or chamber (to contain the milk, cream, liquids, or fabrics) with an internal air vessel or vessels or " pontoons" of corresponding form to the outer chamber and by natural buoyancy floating on the surface of such liquid, the air vessel or pontoon being so constructed that the liquid may pass through certain parts thereof from the lower surface to the upper, and vice versâ, and in so doing is compelled to pass between bars or other obstructing surfaces. This air vessel naturally floats, but by applying a rod and lever or other convenient apparatus thereto actuated by hand or machinery it may be depressed and submerged, and will rise after each downward stroke by its own buoyancy, by which motion a counter or opposing current or rush of the milk, cream, or liquid is created within the chamber in positive directions and through the intersecting bars and openings in the air vessel, by which agitation butter is produced and cleansing or mixing effected.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 18.—N° 1265.

LISTER, George. — "Improvements in machinery or apparatus for feeding slivers of wool or other " filamentous materials to carding and condensing engines or machines."

The invention consists in the employment of a slotted or grooved rod, shaft, or bar carrying a mitre wheel with a feather thereon taking into the slot or groove for communicating a rotary and reciprocating motion to the paddles or feed rollers, it also consists in an arrangement of wheels and apparatus for transmitting motion from the slotted shaft or bar to the traversing bracket, and in the employment of a slotted bar for altering the length of the sliver to be laid on the feed apron.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 18.—N° 1266.

HUGHES, Edward Thomas.—(*A communication from Chauncey Orrin Crosby.*)—" Improvements in the " manufacture of hats and bonnets and in the apparatus employed therein."

This invention relates to hats and bonnets made of cloth, and consists in forming on the outside of the hat or bonnet a design or pattern similar to the plaits of the straw or grass hats and bonnets at present in use, or any other pattern or design may be produced.

The hat or bonnet is composed of two or more pieces of cloth cemented together by paste or other cementing substance, and when cemented is hung in a warm room to dry and passed through a waterproofing solution. It is then placed between plain male and female dies, heated by gas or otherwise, which shape the cloth as required.

The hat or bonnet thus shaped is then placed in a figured female die of the required shape and size, heated by gas or otherwise, and a male die is pressed with great force into the female die, embossing the desired pattern distinctly on the hat or bonnet, which is then bronzed or otherwise colored and stiffened by wire.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 18.—N° 1267.

HARGREAVES, James.—(*Provisional protection only.*)—" Improvements in obtaining phosphates and " phosphatic manures."

When iron is treated by any of the salts capable of yielding oxygen on the application of heat, such as the nitrates of soda and potassa, the resulting slag products, which I have named " steel slag " and " steel " cinder " in the Letters Patent 2046 and 2114, granted to me A.D. 1867, are treated to yield phosphates and phosphatic manures, as follows :—

First. The phosphates are separated by lixiviation or boiling in water and then concentrated to dryness, or by successive crystallization.

Second. By reacting upon the said phosphates of soda or potassa with lime, or any salt containing lime or calcium and capable of precipitating phosphoric acid, I obtain phosphate of lime.

Third. By reacting upon the said phosphates of soda or potassa with magnesia or any salt of magnesia I obtain phosphate of magnesia.

Fourth. The steel slag and steel cinder when sufficiently rich in phosphoric acid I utilize as manure to be applied direct to the land, preferring to grind it to a granular or powdery condition before application.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 18.—N° 1268.

SCHOLEFIELD, Richard.—(*Provisional protection only.*)—" Improvements in brick-making machinery."

The novelty consists in,—

The combination of a rotary disc, having a series of moulds therein provided with plungers operated by a cam fixed on a central pillar and having flanges fixed thereto, forming a hopper with rollers to regulate and feed clay into the moulds at one part or point of the disc's rotation, press and cut it into form at another, and push the forms out upon a creeper or endless apron at another part or point of the rotation, thus constituting a self acting rotary machine in the feeding, pressing, or forming and delivering the forms upon a creeper at a rapid rate.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 18.—N° 1269.

ASHLEY, Alfred, RAWNSLEY, Edward, and WAITE, William Pearson.—(*Provisional protection only.*)—" An improved means or apparatus for lubricating the spindles and other parts of machinery used " for spinning or twisting wool, cotton, mohair, alpaca, or other fibrous substances."

The novelty consists in,—

The combination of a cup with an annular reservoir and a cord of any suitable fibrous substance, to conduct the lubricant by capillary attraction to the spindles, studs, or rods rotating or sliding therein.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 18.—N° 1270.

LUND, Wilhelm.—(*A communication from Theodore A. Goff.*)—" Improvements in machines for turning " off crosshead wrist pins, crank pins, and similar work."

This consists in the employment of a hoop or ring put around the work to be turned, by being made in sections and and revolved about it in a grooved case, for the purpose of carrying the cutting tools.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 18.—N° 1271.

AGER, Nathan.—" Improvements in fastenings suitable for window sashes and for other uses."

This Provisional Specification describes constructing a sash fastener as follows :—The lug on the catch, which is usually fixed on the lower sash in place of being rigidly fixed to its plate as is usual, is arranged to turn on the stud which secures it to the plate, and it is provided with a spring which tends to force its free end away from the fastener on the other sash as far as the stop permits. The arm on the upper sash has a stump upon it, and in securing the sashes this stump acting on the curved edge of the lug presses it towards the other sash, overcoming the spring, until the stump comes up to a notch in the edge of the lug ; the spring then causes the return of the lug, and the stump on the arm is caught in the notch and cannot be pushed back from the outside with a knife, as is the case with the ordinary construction of sash fastener ; the spring also tends to draw the sashes together and prevents rattling.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 18.—N° 1272.

WIDMARK, Harold Wilhelm.—" Improvements in governors applicable to steam and other engines."

According to this Provisional Specification, the ordinary construction of governor is varied by removing the balls from the arms which usually carry them, and placing them on the links which connect these arms with the slide.

[Printed, 2*s*. 2*d*. Drawings.]

A.D. 1868, April 18.—N° 1273.

LÜDEKE, Johann Ernst Friedrich.—(*Provisional protection only*)—" Improvements in machinery for " obtaining motive power."

According to this Provisional Specification a tank has a cylinder fitted in its side; in it is a globular piston, to this a tubular vessel is connected within the tank, and on the other side of the piston a rod communicates its motion to a crank. The tube has a weight and a float linked with it, and its free end, or that at a distance from the piston, is alternately raised and lowered.

[Printed, 4*d*. No Drawings.]

[A.D. 1868, April 18.—N° 1274.

HILL, Richard, and D'OYLY, John Francis.—" Improvements in paddle and other wheels used in " air or water for propelling or driving ships, vessels, and machinery."

This Provisional Specification describes a wheel in which the boards or floats, as the wheel revolves, turn partly round on radial axes.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 18.—N° 1275.

CHILDS, Augustus Bryant.—" Improvements in the grinding surface of millstones, and in apparatus " or machinery for forming the same."

I cut the grooves or serrations commonly known as the " dress " or " crack " of the millstone either in the form of a continuous spiral extending from the centre to the periphery, or in a series of straight or serpentine lines at right angles to the furrows. I form the said grooves or serrations with a diamond or other hard mineral substance. The said diamond or other substance is carried in a tool box arranged to slide on radial arms projecting from a vertical spindle. The latter is supported in the central boss of a frame fixed over the stone. The fixed boss is provided with a stationary worm geared in connection with a feed screw which moves the tool box towards or from the centre of the stone as the vertical spindle revolves. The gearing is modified when it is desired to cut the straight or serpentine grooves.

[Printed, 1*s*. Drawings.]

A.D. 1868, April 20.—N° 1276.

WARRINGTON, Thomas Alfred.—" Improvements in candlesticks and other like articles for holding " candles and tapers."

This invention has for its object an improvement in candlesticks, branches, or candle and taper holders of whatsoever kind for burning and holding candles or tapers, by means of which they are made to support or contain the different sizes of candles or tapers with[*out**] any paper, wrapping, or other equivalent arrangement, with greater facility and advantage than any arrangement heretofore known.

[Printed, 8*d*. Drawings.]

A.D. 1868, April 20.—N° 1277.

ABEL, Charles Denton.—(*A communication from Jean George Kugler.*)—" Improvements in the means " and appliances for press-copying letters and other written documents."

This invention consists in arranging a number of pieces of linen, cloth, or other material capable of absorbing moisture between two pieces of cardboard, periodically soaked in water and contained in a book-cover, which is then subjected to pressure under the copying press.

When a letter, &c., requires to be copied, the dry copying paper is placed upon it, and upon the copying paper is placed one of the pieces of linen, rendered moist, as above described, and which is again covered by a piece of oiled paper, after which the letter, &c., is subjected to pressure in the usual manner. The linen sheet is afterwards carefully replaced in the cover containing the other sheets. These, as also the soaked cardboard, may be treated with camphor to prevent mildew.

[Printed, 8*d*. Drawing.]

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* The word " without," is found in the copy of the Abridgment delivered by the Applicant, but the word " with " only appears in the original Abridgment.

A.D. 1868, April 20.—Nº 1278.

ARLES DENTON.—(*A communication from Pierre Armand Neuman.*)—" Improvements in the
t of textile fabrics for consolidating them and rendering them impermeable."
ntion consists in steeping textile fabrics for a short time in sulphuric acid, so as to dissolve and
a glutinous mass a portion of the fibres on the surface of the fabric, after which the fabric is well
ater. By this means the dissolved portion in impregnating and coating the unconverted fibres
renders the latter of a parchment like and impermeable texture. The fabric may also be coated
entrated solution of linen or cotton fibres in sulphuric acid previously prepared.
4*d.* No Drawings.]

A.D. 1868, April 20.—Nº 1279.

OHN.—" Improvements in the construction of rotary engines and pumps."
ntion relates to the construction of such rotary pumps and engines as have a cylindrical piston
entrically in a cylinder, and which have also a shutter constantly kept near to the same and
and out through a suitable part of the circumference of the cylinder in such a manner as to divide
om the outlet. In pumps and engines constructed in accordance with this invention the shutter
n arc of a circle which avoids the slot in the shutter-box, the axis of such arc being a bar parallel
der and passing through a stuffing box at the end of the shutter-box, the same being so placed
a sufficient guide and support for the shutter, and so actuated from without the shutter-box by a
rm the means of reciprocating the same, and also so placed as to secure a favourable angle of the
the piston. The lever which actuates the axis-bar is so placed, by preference, as to have one
the axis-bar, while the other end at its centre coincides with the line produced by the contact of
with the piston. To the other end is attached the connecting rod, the length of which is equal
s of the piston, and is actuated by a crank-pin or eccentric, the centre of which is the centre line
n. By this construction an equable motion of the shutter with the piston at their line of contact is
dependently of any pressure of the one upon the other.
lty of this invention consists in the combination and arrangement of mechanism employed.
10*d.* Drawing.]

A.D. 1868, April 20.—Nº 1280.

IS MARIA.—(*A communication from Alfred Foucaut.*)—(*Provisional protection only.*)—" Improve-
apparatus for signalling or giving orders on board ships and in other places."
ntion is intended particularly to enable the captain of a vessel to direct and control the helmsman
le motion of one or more keys or switches and by the sound of bells of different pitch. A box
ge is in electric communication by wires with the wheel house. The novel features are :—1. The
at the wheel house of a hinged segment provided with two armatures, of an index hand, and
board" pane and a "port" pane as described. 2. The combination at the wheel house of a
ring, the hinged segment, and the index hand as described. 3. The combination at the wheel
o spring studs, the hinged segment, two electro magnets, and two electro magnetic alarm bells,
board and the other for port as described. 4. The combination at the wheel house of a lid to
e indicating "course," of an electro magnet, an armature, and a switch as described. 5. The
at the wheel house of an alarm and the lid, the "course" pane, the electro magnet, and the
scribed. 6. The combination with the rudder head of a switch in proximity thereto and of two
netic alarm bells at the captain's bridge as described. 7. The combination with the last named
rudder head of a prismatic regulator carrying non conducting segments of different lengths as

ic battery and the proper wires are arranged and combined to suit the working of the various
mechanism.
4*d.* No Drawings.]

A.D. 1868, April 20.—Nº 1281.

T, JAMES, and FAWCETT, JOSEPH ADDEY.—" Improvements in steam boilers or apparatus
ating steam."
lty consists in—
ting, arranging, and setting pipe or tube boilers so as to feed them with fuel at several places or
rmed in the top of the brick work in which they are set.
10*d.* Drawing.]

A.D. 1868, April 20.—N° 1282.

FARRAR, Jabez Bunting.—(*Provisional protection only.*)—" Improvements in spinning and doubling " machinery."

The novelty consists in—

The application to spinning and doubling machinery known as " cap-frames " of a lubricating cup or dish resting upon a spring placed on each spindle or stud betwixt the lifter and the rail in which the spindle or stud is fixed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 20.—N° 1283.

MALAM, William.—(*Provisional protection only.*)—" Improvements in the manufacture of gas and in " apparatus employed in such manufacture; part of the invention being also applicable to the manufacture " of retorts, retort casings, crucibles, and melting pots for various useful purposes."

Gas is manufactured from dead oils of naphtha or of coal tar, the same being fed into heated retorts and kept in their reservoir warm and fluid, which may be done by heated air conveyed through a tube or flue leading from the furnace or retort chamber.

A gas making apparatus is described in which the furnace or retort chamber is constructed with flues leading from the fire place between and beside the retorts, and fed with fuel through their upper ends, and fuel dropping through them to the fire. The oil is fed into the retorts from a reservoir above the furnace, whence it descends through pipes with stop cocks into feeding and regulating gauges communicating with the retorts, from which the gas produced is carried up through discharge pipes into a valve box or indicating chamber at the upper part of the apparatus, such pipes entering therein and passing to near the bottom thereof. The cessation of sound in any of the pipes indicates the cessation of work in the corresponding retort.

Gas retorts and other retorts, also retort casings, crucibles, and melting pots are manufactured of asbestos or talc or compounds thereof combined with fire clay, fire brick, rough stuff, or other refractory material. One mode of doing this is described as consisting of working the asbestos or talc (laid on in films, flakes, or layers or introduced in powder) into the refractory material mixed with water and kneaded into a paste.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 20.—N° 1284.

McGHIE, James.—" Improvements in apparatus for spinning or twisting."

One improvement consists in substituting for the ordinary spindle-and-flyer arrangement a non-revolving spindle on which the bobbin or pirn rotates and is moved up and down by the ordinary or other traverse movement, whilst for the flyer there is substituted a kind of inverted flyer or pair of flyer legs fixed to the pulley or pinion or to a disc or plate that is attached to or in one piece with the pulley or pinion.

A second improvement consists in applying a small roller to one or to each of the flyer legs.

[Printed, 8*d.* Drawing.]

A.D. 1868, April 20.—N° 1285.

WORSSAM, Samuel William, junior.—" Improvements in machinery or apparatus for planing and " cutting wood."

The Invention relates to the application of means to those machines known as " trying up " and " squaring up " machines whereby in addition to their ordinary work they are rendered capable when desired of simultaneously working on three sides of the stuff under operation.

For this purpose are mounted on a suitable frame a pair of feed rollers and a pair of vertical shafts or axes to which suitable cutters are fixed according to the work required, the feed rollers and vertical shafts or axes having rotary motion given to them in any suitable manner.

The feed rollers and vertical shafts or axes are with their frame capable of being moved out of the way when the machine is used only for " trying " and " squaring up " work and of being readily brought into position for action directly they are required, whilst the travelling bed of the machine, when not required for " trying up " or " squaring up " work, is moved out of the way and into position for receiving the work after it has been operated upon by the three cutters.

[Printed, 10*d.* Drawing.]

A.D. 1868, April 20.—N° 1286.

SYMINGTON, William Weldon.—" Improvements in machinery for sizeing, tarring, dyeing, drying, and " finishing laid and other twines, lines, yarns, threads, and fibres."

I make the revolving cylinders on which the yarn or fibre is dried of iron, the surface of which I enamel to prevent the discoloration of the yarn. These cylinders I make hollow and fill them with steam through the axis, which is also hollow. I enclose said cylinders in a chamber containing heated air, by which means the yarns or fibres are thoroughly dried. By enamelling the roller used in connection with the sizeing or other bath I am enabled to make them of iron instead of brass as hitherto. I further apply revolving brushes to the yarn after leaving the drying cylinders for the purpose of finishing it. I also place similar brushes to revolve against the peripheries of the skimping and drudging rollers to remove deposits left thereon by the yarn or fibre.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 20.—Nº 1287.

HUMES, John Joseph Reveley, and SULLIVAN, John Giles.—"Improvements in machinery for "making bricks."

According to this invention a rotating table is used containing the brick moulds, above which a hopper is fixed into which the materials are placed, whence they fall by gravitation into the moulds; these parts of the machine are supported by standards, and the table is made to rotate by a driving shaft and pullies.

When the moulds are filled they are carried under pistons, pressed down by a cam motion to such a distance as to form the required thickness of brick; after which the table further rotates until the moulds are brought over an open space of a lower table, where they are delivered, or they may be carried off by an endless band. Two cams and four pistons may be applied in one machine, and thus a great number of bricks can be made in one day.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 20.—Nº 1288.

NEWTON, Alfred Vincent.—(*A communication from Cyrus Bullard Morse.*)—"Improvements in the "construction of rings for ring spinning."

The invention relates to the manufacture of spinning rings from cast steel and hardening and tempering the same at the wearing portion only. Also providing them with lugs for fitting them to their rails.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 20.—Nº 1289.

COLES, George, JAQUES, James Archibald, and FANSHAWE, John Americus.—"Improve"ments in the manufacture of elastic bands."

The invention consists in embossing the faces of the bands and rounding the edges.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 21.—Nº 1290.

WOOLFIELD, John.—"Improvements in the method of and machinery for corrugating or fluting sheets "of metal."

Firstly, in pressing the sheet into two flutes near its centre, and so proceeding from and on each side of the centre simultaneously, all such pressures continuing until the corrugation is completed.

Secondly, in constructing a set of rolls that commence fluting the sheet in the centre and proceed to flute it from and on each side of the centre simultaneously, so that the metal is drawn in freely from two sides of the sheet.

Thirdly, in pressing any sheet to be corrugated into a fluted table (fluted in as many flutes as will be contained in the sheet when completely corrugated) by means of stamping bars equal in number to the flutes in the fluted table, by a succession of pressures, each and every of these bars continuing to press each and every flute until the corrugation is completed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 21.—Nº 1291.

COLE, Arthur, and CARTER, Jonathan.—"Improvements in and applicable to lamps in use in railway "carriages and in similar situations."

The object of the invention is to prevent the overflow of oil in lamps in which the reservoir is above the burner, by preventing the admission of cold air to the reservoir after the light has been extinguished, and by increasing the supply of external air to the upper part of the lamp.

This is effected by the insertion of a stop cock in the branch pipe on each side of the burner, and by raising the cover of the lamp so as to leave an air space underneath it, or by making apertures in the cover.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 21.—N° 1292.

JACKSON, Samuel.—(*Provisional protection refused.*)—" Improvements in propelling and gaining motive " power."

The novelty of which mainly consists in applying the pressure of steam, gas, water, or any other fluid or liquid to a wheel, pulley, hoop, or cylinder, and cause it to revolve, thereby producing motive power.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 21.—N° 1293.

GORSE, William.—" Improvements in the preparation of strips of iron and steel for the manufacture of " flat-pointed cut nails."

This invention consists in rolling bars of Swedish iron or Bessemer homogeneous metal or other iron or steel having little or no fibre into bars or strips of a taper or wedge shape in cross section, or into compound strips of the same kind joined edge to edge. The compound strips are divided longitudinally into [illegible] strips. The taper or wedge shaped strips are cut up transversely into flat pointed nails in the ordinary way; the nails produced, owing to the absence of grain or fibre in the iron or steel, being very strong.

[Printed, 8*d.* Drawing.]

A.D. 1868, April 21.—N° 1294.

KEMP, Ebenezer, and GOURLAY, Henry.—" Improvements in marine steam engines."

This invention relates to the constructing of marine steam engines so that the stroke of the cylinder piston may be longer than twice the radius of the crank; and the improved arrangements embodying this feature are more particularly suitable for driving screw propellers.

In carrying out the invention the piston rod is jointed to a lever or to a combined pair of levers which has the connecting rod from the crank jointed to it at a point nearer to its fulcrum.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, April 21.—N° 1295.

PAGET, Arthur.—" Improvements in apparatus for the hauling, tightening, or pulling of ropes, cords, " chains, bands, and other mechanical equivalents, and for the holding or making fast such ropes or other " mechanical equivalents, and loosing the same when desired."

One part of this invention consists in combining with retaining or holding pullies or snatch-blocks a ratchet wheel and pawl so arranged that the pulley will readily revolve in the direction in which the rope or chain is hauled, but may be prevented from revolving in the contrary direction. The pulley is, by preference, made with a V groove; for chains it may be made with recesses and be connected to the ratchet wheel by a clutch or catch.

Another part of the invention consists in combining with the said ratchet pulley a ratchet lever to be worked by hand or foot.

Another part of the invention consists in making the ratchet pulley a multiple grooved pulley acting in combination with another single or multiple grooved pulley or cylinder, the two being by preference geared together. The delivering groove of such multiple grooved pulley may be made slightly larger in diameter than the others, or the grooves may all be made to increase slightly in diameter towards such delivering groove. This arrangement may be applied to all multiple grooved pullies.

Another part of the invention consists in making the grooves of such ratchet pullies, as also of other hauling pullies, and whether with V grooves or ordinary grooves, with corrugations, between which the rope passes so as to be held thereby.

Another part of the invention consists in employing one such before described hauling or acting ratchet pulley in combination with several holding or retaining pullies.

Another part of the invention consists in making the frame of the hauling or acting pulley or snatch block to turn on a swivel so as to be adjusted in any required position.

Another part of the invention consists in arranging the handles of windlasses to be slided out so as to increase their leverage in proportion as the resistance increases. Also, in combination herewith, or with an ordinary winch handle windlass, a ratchet lever is employed either fixed to the windlass or detachable therefrom, so as to be used in connection with several windlasses. Or the sliding handle may be made to act as a ratchet lever.

Another part of the invention consists in connecting to the pawls of windlasses a lever for disengaging the same from the ratchet teeth. The lever is either fixed to the pawl or it acts by concussion as a tumbling lever.

Another part of the invention consists in arranging cleats or apparatus for holding and releasing ropes, &c. so as to act with shifting, variable, or differential leverage, and at a variable angle upon the rope, so that the part of the rope first passed in the cleat is held firmly by the part passed last in the cleat through the cleat, being thereby pressed against a fulcrum provided, and against the said part of the rope first laid in the cleat, while this may be readily released by withdrawing the part last laid in the cleat.

[Printed, 2s. 2d. Drawings.]

A.D. 1868, April 21.—Nº 1296.

COLES, George, JAQUES, James Archibald, and FANSHAWE, John Americus.—"Improved " machinery or apparatus for producing thin strips or filaments from various substances."

We use pairs or sets of cutters with square edges, and combine a number of these cutters, so that several threads may be cut simultaneously from the same sheet of rubber.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 21.—Nº 1297.

BING, Louis.—"An improved mode of and apparatus for ascertaining the actinic power of light."

There is a sensitive surface on which the light shall fall in such a manner as to produce a graduated series of shades ranging from full light to any desired degree of obscurity, and for identifying and defining the shades thus produced there is a graduated figured scale.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 21.—Nº 1298.

DREYFOUS, Samuel.—(*A communication from Michel Alcan.*)—"An improved apparatus for removing " the cotton from cotton pods."

The invention relates to an improved machine for removing the cotton from the cotton pods and at the same time suitably beating and opening the cotton, and prepare the same for ginning."

In this machine a feeding apron carries the cotton pods to be deprived of their cotton between a pair of revolving rollers, which rollers serve for opening the pods and are provided with suitable longitudinal flutings or serrations interrupted at certain intervals so as to leave open or smooth parts; the cotton is further taken hold of and separated from the pods by a second pair of rollers fluted over their entire length, from which latter pair of rollers the cotton is finally stripped by a revolving beating fan consisting of a cylinder or drum provided with longitudinal leather wings set obliquely in respect to the axis of the cylinder; the various parts are connected by suitable gearing, and the machine receives motion from any suitable prime mover.

[Printed, 10*d*. Drawings.]

A.D. 1868, April 21.—Nº 1299.

RENSHAW, Arthur Dallison.—(*Provisional protection only.*)—"Improvements in apparatus for " shearing or clipping the wool or hair of animals, and in the means for operating the same."

My invention relates to an apparatus for shearing sheep and clipping the hair of horses and other animals by the action of reciprocating cutters which move across the edges of fixed cutters and work in both directions. The said invention consists chiefly, first, in the employment of anti friction balls or rollers between the working parts of the apparatus to prevent friction without the frequent lubrication which has heretofore been found necessary in such apparatus; secondly, in the use of an adjustable presser bar for keeping the fixed and moving cutters properly,in contact; thirdly, in the peculiar arrangement of a comb for regulating the length of the hair to be cut and for guiding the same properly between the cutters; fourthly, in the employment in connection with the said cutters of driving mechanism for imparting a rapid reciprocating motion to the same without impairing the facility with which the apparatus is adjusted to work in any desired position. The said mechanism is provided with a barrel or roller which is supported to turn in a bearing secured by a strap around the waist of the operator. Upon the barrel is wound a cord whose end is brought into a convenient position to be pulled by the hand of the operator. The barrel is turned in one direction by unwinding this cord and in the other direction by a spring, the motion thus obtained is imparted to the cutters through an elastic or weighted cord or band which is connected to an eccentric, or cam, or lever fixed on any convenient part of the cutting apparatus. My invention consists, fifthly, in passing the said cord or band through the handle which supports the said cutters, such handle being made hollow or tubular for that purpose.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 21.—N° 1300.

JOHNSON, John Henry.—(*A communication from Louis Francois Alexandre Arson.*)—" An improved " mode or method of correcting the deviations of the mariners' compass in iron ships."

This invention has reference to a peculiar mode or method of correcting or counteracting the deviations of the mariners' compass in iron ships; and consists in subdividing the hull of the ship into two or more lengths or sections by interposing at one or more parts transversely across the hull a thickness of copper, brass, or other non magnetic metal, which shall completely cut off all magnetic connection between one portion or section of the hull and another. By this means the mass of iron composing the hull is divided into several magnetic poles, which by their counter influence upon the needle of the compass in opposite directions allow the needle to assume that position which is due simply to terrestrial magnetism.

The position of the compass in the ship and of the interposing bands or belts of non magnetic metal in the hull will be dependent on each other, it being essentially necessary that the needle be in a state of magnetic equilibrium as regards any local attraction, so that the pole of one section of the hull shall act in opposition to that of the other section. In practice it has been found that when the hull is divided into two sections, for example, by a non magnetic band or belt amidships a good result will be obtained if the compass be situate on the line of such separating band or belt. If, say, two of such bands or belts be employed dividing the hull into three sections, the compass should be situate in the centre of the midships section or length.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 21.—N° 1301.

FUGL, John, and FUGL, Henry Thomas.—" Improvements in curtain poles or laths."

We make the lath of a hollow boxlike shape, having a slot on the under side communicating with the interior, in which are placed two spiral springs, each of which is connected to a sliding block. A curtain is suspended from each spring by eyes attached thereto passing through and sliding in the slot in the box lath, the curtains being hooked on to the eyes in the usual manner, the springs always tending to keep the curtains closed. The curtains may be drawn apart by a cord connected to both sliding blocks and passing over a pulley at either end of the lath, from one end of which it is pendent.

In making a curtain pole the slot may either be formed at the top or at the bottom; in the former case curtain rings would be employed on the pole connected to the springs by pins sliding in the groove at the top, the curtains being suspended therefrom in the usual manner.

Short coiled springs may be used, which would tend to keep the curtains open unless closed by means of the cord.

[Printed, 8*d* Drawing

A.D. 1868, April 22.—N° 1302.

MAYNARD, Moses Savery, and GRIME, Robert.—" Improvements in machinery for governing the " speed of motive-power engines."

Our invention consists in the combination of a balance wheel, pendulum, or clock work, with a differential or sun and planet motion. One part of the differential motion is driven by the engine to be governed, and the other part by the balance wheel or pendulum or clock work, while the throttle or other valve or starting gear is connected to and driven by the intermediate part of the differential motion.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 22.—N° 1303.

JOHNSON, John.—(*Provisional protection only.*)—" Improvements in metallic packings for pistons, pump " buckets, and valves."

My improved packings consist of two eccentric conical expansion rings, one placed within the other, and with the thinner portion of one opposite the thicker portion of the other; these rings are cut across in one place, and their forms induce the outward and lateral pressure against the cylinder and against the flange and lid of the piston or pump bucket to ensure a steam, water, or air tight packing.

The above rings when applied to the back of a slide valve and acting on the lid of the valve box relieve the valve from a portion of the pressure.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 22.—N° 1304.

EDWARDS, John.—(*Provisional protection refused.*)—" Improvements in railway point indicators."

The novelty is the adaptation and application of levers or cams so fixed that they will come in contact with the points and prevent the signal being given unless the points are in their proper position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 22.—N° 1305.

, **William.**—(*Provisional protection only.*)—" Improvements in the manufacture of ornamental
n twist lace machinery."

ect of this invention is to manufacture ornamental fabrics in twist lace machinery, whereby are
wo pillars of two threads each and two net holes to every single carriage, and ornament or patterns
et or lace fabric. This object is obtained by using three warp threads to each bobbin thread, two
ds forming one pillar and one warp thread and a bobbin thread forming the other pillar of the net
and this net or fabric is ornamented by using additional threads to those above described, and
actuated and moved by the use of the jacquard.

, *4d.* No Drawings.]

A.D. 1868, April 22.—N° 1306.

, **Joseph Holroyd.**—" Certain improvements in machinery or apparatus for sizeing and drying
r yarns of cotton or other fibrous substances."

velty of the invention consists, first, in combining any of the well known machines for sizeing with
g apparatus described in the Letters Patent, N° 889, dated March 29, A.D. 1865, and arranged so
on as the warps issue from the sizeing apparatus they pass into the drying apparatus, where they
ded round revolving rollers and continually progress until they pass out therefrom in a dry state.
ly, in constructing the rollers employed in such drying machines of an increased diameter to those
nployed, in order to take the warp more rapidly from the sizeing machine, and in applying brushes
positions to each or any roller, or to the ribs or " lags " thereon to cleanse them from the size
by the yarn.

, *10d.* Drawing.]

A.D. 1868, April 22.—N° 1307.

, **Charles Barlow.**—(*A communication from Edward Chamberlain.*)—(*Provisional protection*
Certain improvements in apparatus for stamping, dating, indicating, cancelling, or otherwise
ing or imprinting marks or designs."

elty of the invention consists in applying or adapting to the stamping or depressible end of the
pported lever, one, two, or more discs or rollers, the peripheries of which may bear numerals,
nths, and years, or any required design or device which are changeable and required to be inserted
ear as stamped in a permanent stamp or design which is fixed (stamping surface downwards) on
ing end of the lever, such discs having registering holes and pins so as to ensure correctness in
. Parts of this permanent stamp or plate are so cut away or removed that the numbers, dates, or
the peripheries of the changeable discs may project through it and so form part of the stamping
surface, and between this surface and the pad on which the paper or article to be stamped is
ribbon is extended which has been previously saturated with suitable ink. Thus, when the head
ible end of the lever is struck, the design is impressed through the ribbon which is supplied with
oring matter, and stamps or imprints the design on the surface placed on the pad below.

, *4d.* No Drawings.]

A.D. 1868, April 22.—N° 1308.

KER, **Thomas.**—" Certain improvements in the manufacture of water or liquid proof fabrics or
."

velty and feature of this invention consist in the application and combination of paper having a
l, ribbed, or uneven surface to the surface of the ordinary coarse hempen or other suitable material,
ination to be made during and simultaneously with the process of tarring, both paper and cloth
ed or waterproofed together.

, *4d.* No Drawings.]

A.D. 1868, April 22.—N° 1309.

Henry.—" An improvement in the manufacture of safety matches."

ention consists in saturating the splints (previously to their being dipped) in a solution of any
alt which has the property of preventing the wood from remaining at a red heat after the flame has
guished without being in any way detrimental to the inflammable nature of the splint, and thus
the possibility of accident from the dropping of a match after the extinction of the flame, but
splint is still at a red heat.

, *4d.* No Drawings.]

A.D. 1868, April 22.—Nº 1310.

SIDE, Robert.—" A new machine for obtaining motive power."

This invention consists in mounting a weighted beam or beams on two or more two throw crank to or formed on separate shafts working in opposite directions. The cranks working one within th The crank pins work in slots in the beam, and have the effect of moving the ends of the weighted up and down, the gravitating power of the weight producing the principal motive power of the mac combination with the compound leverage of the cranks and beams.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 22.—Nº 1311.

FIDDES, Augustine, and CURTIS, Charles John.—(*Provisional protection only.*)—" Improv " in the construction of safes or depositories to contain valuable property, and in the locks thereof."

The novelty and improvement of this invention consists, first, in making the safe stronger than he and in filling it all round with loose hardened rollers to prevent drilling or cutting out of any part The door is also filled with rollers, and has steel rivets fixed therein at that part where the small situated to prevent it being drilled or cut out. The door is locked to the frame of the safe by bolts through the rim of the lock in a radial direction from the centre of the lock. The ends of the sever take into notches in a strong plate, which is caused to move outwards when it is required to unlock t The door is perfectly flush outside, there being no handle to it. The unlocking of the small lock c small square stem to protrude through the centre of the door, and upon this stem a key is plac turned round for unlocking the door.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 22.—Nº 1312.

SCOWEN, Thomas Layzell.—" A new hook button for boots, shoes, and other articles of clothin

This invention affords greater security and in some cases dispensing with button holes and affordin facility in fastening. The above is obtained by having the shanks of buttons long (length accord purpose), which shank is placed any distance from the centre to edge of buttons according to purpos bent under the button to form a hook, or in some again bent to form a double hook for attaching w sewing, or button knobs formed on or attached near to the points of hooks and thus forming a button, or the hook-button made in one piece; some buttons will be formed and jointed under the n such manner that the pulling of the button hole, loop, or cord on it will draw the opposite edge of b down to prevent anything catching thereon.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 22.—Nº 1313.

SCOWEN, Thomas Layzell.—" An improved method of fastening the button boot without the " button holes."

This invention dispenses with button holes in the ordinary button boot and affords greater facil fastening, also in giving ease to the wearer without altering the general fitting appearance of the boot. above is obtained by placing a row of hook-buttons* or suitable studs, buttons, or hooks on the button piece in lieu of button holes, and a corresponding row placed lower than the buttons usually are. The b piece is drawn down close to the side of boot by means of a cord hooked or intwined alternately on the rows which can be drawn to any degree of tightness required.

[Printed, 6*d*. Drawing.]

* This hook-button is not yet published.

A.D. 1868, April 22.—Nº 1314.

LAKE, William Robert.—(*A communication from William Johnson Towne.*)—" An improved lubric " packing."

This invention consists in the application to the exterior surface of packing composed of powdered fibrous materials of a glazing or coating of a glutinous substance either alone or mixed with a powd mineral substance or substances. My invention also consists in the application to the exterior surf ordinary packing composed of fibrous material only, of a glazing or coating composed of a glutinous stance and a powdered mineral substance or substances combined together. The said invention, further consists in a packing composed of fibrous material, a powered mineral substance or substances, a glutinous substance, when the whole are intimately mixed together during the process of braiding, twis or plaiting.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 22.—N° 1315.

LAKE, William Robert.—(*A communication from Lauriston Towne.*)—" Improvements in machinery for " manufacturing small articles from sheet metal."

This machine is chiefly intended to make the article called a "button hook," which is used in place of eyelets for holding lacings in shoes and gaiters. The blanks to form these button hooks are cut one by one from a ribbon of sheet metal. Each blank is as it is cut deposited in such position that it can be transferred by a suitable feeding apparatus to a circular horizontal plate or table, where it is held by spring jaws. This plate has an intermittent movement given to it, making four intervals of rest for each revolution. The plate has four sets of spring jaws occupying four radii and at equal distances apart. Each pair of jaws receives from the feeding apparatus a blank in turn, so that while a new blank is being presentod two other blanks are being operated upon and a finished button hook is being discharged all within the same space of time.

Suitable bending and swaging devices are arranged to work in combination with the intermittently revolving plate upon each blank, and these devices are located at points where they can operate when the plate is at rest. In a line with the first pair of jaws is the feeding mechanism. At right angles with this and in line with the second pair of jaws is the first swaging and bending apparatus. At right angles with the last and in line with the third pair of jaws is the second bending and swaging mechanism, and in conjunction with the fourth pair of jaws is the discharging mechanism.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, April 22.—N° 1316.

LAKE, William Robert.—(*A communication from George Washington Chipman.*) — " Improvements in " carpet linings and in machinery for manufacturing the same."

This invention has reference to the manufacture of that class of carpet linings in which a sheet or layer of loose coarse fibrous wadding material is confined to one surface of a sheet of coarse paper, or between two sheets of such paper; the object of the invention being to form the lining in such manner that it may be freely handled and used without danger of relative displacement of the wadding and paper, such linings being used to underlie carpetings for the purpose of protecting them from wear.

The said invention consists partly in the arrangement of mechanism through which the fibrous material is formed into a bat, by being fed up to the surface of a card cylinder, the teeth of which carry the filaments to the surface of a lap-forming cylinder, upon the rotating gauze surface of which it is drawn and formed into a sheet, leaving the cylinder in this form and passing thence between presser rolls, and between the sheets of paper passing between such rolls.

The said invention also consists in forming such lining of two strips of paper (receiving the batting between them), one of which strips is wider than the other, so that when they come together with the lining between them, the opposite edges of the wide strip overlap the adjacent edges of the other strip in such a manner that they may be folded over and cemented to the said overlapped edges. The said invention also consists in the means for applying cement to the edges of the wide strip, and in the mechanism for effecting the folding over of the cemented edges; also in a carpet lining in which the loose fibrous material is secured to a sheet of paper, or between sheets of paper, by cement applied over the surface of the paper; also in a carpet lining having the paper and loose fibre united in a paper-making machine or while the paper is in a pulpy or semi-pulpy condition; also in a carpet lining having the loose filling secured between sheets of paper by cementing together the outer contiguous edges of the paper; also in a lining having the loose filling secured to or between sheets of paper by rows of stitches or "quilting;" and, lastly, in a lining made of the general size and form of steps of stairs to be used as a carpet pad or lining.

[Printed, 10*d.* Drawing.]

A.D. 1868, April 22.—N° 1317.

HILL, Henry.—" Improvements in waterclosets, and in ball and other cocks, taps, and valves."

In the water closets the water way communicates with the upper part of the basin. A flanged cylinder is attached to a trap and formed with a seat which receives a plunger; from it projects a pipe connected with the basin. The plunger fits at bottom in a ring held between the cylinder and trap, thus forming a seat. Round the cylinder passes a hollow mould forming an inlet on one side, and an outlet on the other and connected with a supply pipe. The plunger has a handle, and it may have a spring. When lifted it comes in contact with an arm communicating with the supply valve to flush the basin. Instead of using a supply cistern and ball cock water may be obtained direct from the service pipe by opening a three way supply cock by levers or equivalents worked by the plunger or seat.

In cocks, taps, or valves a cylinder has a supply projection at one side and a seat receiving a plunger passing through a screw plug. A pipe is drawn over plug and plunger. The plunger is sometimes bored to receive elastic material to form tight joint or packing. The plug receives the ball lever which passes into a slot in the plunger, so that as the ball falls the plunger is raised. In a modification a tube or cylinder has studs, to which is hinged a lever having an enlarged part falling into a seat. The lever being acted on by a cam.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, April 22.—N° 1318.

NEWTON, William Edward.—(*A communication from Donald L. McDonell.*)—(*Provisional protection only.*)—" Improvements in paddle wheels for vessels."

The floats are rigidly attached to the outer ends of one set of arms by one edge, the other edge being projected forward and inclined inward and secured to the preceding set of arms, or to the rims of the wheel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 22.—N° 1319.

CHARD, Henry Dinham. — (*Provisional protection only.*) — " Improvements in the construction of " buildings."

Plain or ornamental slabs which are intended to form the internal and external faces of the walls are cast in Portland cement. These slabs fit together and present the appearance when in place of blocks of stone, and the space between the inner and outer line of slabs is filled with well mixed concrete.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 22.—N° 1320.

MURDOCH, Hunter Henry. — (*A communication from Emile Questienne and Edmond Van Schepdael, the younger.*)—" Improvements in the construction of ' concaves,' or breasting for the beating drums of " thrashing machines."

This invention consists in an improved construction of the " concaves " used in connection with the beating drums of thrashing machines. Instead of forming the said concaves of bars of rectangular section with angular corners or edges set round a portion of the periphery of the beating drum, according to this invention at that part of each bar where usually there is a sharp or angular edge, against which the grain is beaten, a rounded groove or depression is formed along the length of the said bar, extending diagonally to about the middle of the thickness of the bar, the edges of the said groove or depression being rounded off or curved on each side, so that the grain operated upon by the beater comes in contact only with the curved surfaces on the said concave.

[Printed, 8*d.* Drawing.]

A.D. 1868, April 22.—N° 1321.

FAIRLIE, Robert Francis.—" Improvements in railway carriages and waggons, and in the means of " coupling them together to form trains."

This invention relates to a peculiar construction and arrangement of railway carriages and wagons and to an improved mode of coupling or connecting them together to form a train, whereby friction is considerably reduced, unpleasant shocks are avoided, the length of the train for a given quantity of passengers or goods is shortened, and other advantages are obtained. The essential features of this invention consists in coupling the carriages or wagons of a train from centre to centre of the framing, in lieu of coupling them at the extremities of the frames, and in substituting for the ordinary buffers a curved abutting surface on the end of each framing, the curve being struck from the coupling centres. The coupling or traction bars may be either rigid or combined with draw springs, and the curved abutting heads may also be either rigidly fixed to the framing or be combined with metal or india rubber springs for the sake of elasticity. The coupling bar which is connected at each end to the centre of the frame of the carriage or wagon may be divided in the middle, each half being connected to the other by any convenient arrangement of screw coupling for the facility of tightening up the two wagons. It is obvious that this coupling bar will always form the chord of the curve traversed by the two wagons or carriages so coupled together, and as the traction force is through the chord, the line of draught will be situate between the centre line of the rails and the inner rail of the curve, in lieu of outside the centre line, as in the ordinary mode of coupling.

By the arrangements hereinbefore described, the centres of the axles of the several wagons or carriages are always kept in the same relative position to each other, and consequently motion may be communicated from one to the other by means of straps, bands, or chains.

[Printed, 10*d.* Drawings.]

A.D. 1868, April 22.—N° 1322.

I, **David**.—(*Provisional protection only.*)—"Improvements in spindles used for spinning or
; yarn."
ture of novelty which constitutes this invention is the securing of the buttons (by which the
re held in place) by means of a key, feather, or stop, fitting into a suitably formed recess, in
inction to the present mode of fixing the same by screws.
l, 4*d*. No Drawings.]

A.D. 1868, April 22.—N° 1323.

', **Edward**.—"Utilizing the hoop, rim, or frame under the top of an ordinary loo, centre, or
ble, whether circular, oval, or any other shape."
velty is adding the bed or bottom to the hoop, rim, or frame of tables which are now left open
, and adding the elastic substance to the interior of hoop, rim, or frame, so that various games can
on hitherto useless space, and leaving the tops loose which are now fastened.
d, 4*d*. No Drawings.]

A.D. 1868, April 23.—N° 1324.

TON, **William**.—(*Provisional protection only.*)—"Improvements in the generating of steam,
the means or apparatus employed therefor."
id invention consists in the use of superheated steam in a direct manner as a medium or agent for
ction of steam in close boilers or generators, under pressure, for actuating steam engines, and for
eral purposes for which steam is used from such close generators or vessels, accomplished as
-By conducting or forcing the moist steam raised in one boiler through a highly heated dry close
m which it issues, and is forced or injected in a highly heated or "superheated" state, into the
e water of another steam boiler or generator, by preference, regulated or maintained at a lower
han that within the first boiler or the superheater, so as to generate steam therein and therefrom
ect contact and action of the superheated steam on the water, to which it immediately imparts all
rged heat above that due to it at the boiling pressure within the generator. In some cases the
from the superheater is injected into the water of several generators, or into that of the same
n which the moist steam is supplied. Having the eduction pipe from the superheater regulated
es and valves to suit accordingly and formed with check valves to prevent back current, or a small
ugh the pipe where it passes down through the steam space to the exit orifice, which is preferred
e form of a long horizontal perforated rose pipe, all substantially in the said manner and for the
ses, and otherwise in addition to or in accordance with any of the usual modes and means heretofore
the same purposes of raising steam in close generators.
l, 4*d*. No Drawings.]

A.D. 1868, April 23.—N° 1325.

STLE, **Thomas**.—"Improvements in the manufacture of bowls for mangles, washing machines,
er purposes."
vention consists in the employment of cocoa nut fibre, or coire, or other fibres of palm trees in
facture of bowls for mangles and other machines. The fibres are first made into discs, and these
ut on a shaft and compressed in a hydraulic press, then turned up and polished in a lathe.
l, 4*d*. No Drawings.]

A.D. 1868, April 23.—N° 1326.

N, **Edward**, and WHITTAKER, **William Walker**.—"Improvements in machinery em-
n the manufacture of felt."
vention consists in working the top rollers of the hardening machine by levers connected to a
or shafts, whereby the rapid to and fro motion endwise is given to the top rollers for felting the
ether as they pass on an endless belt between the top and bottom rollers. The side shafts are
y one or more discs with elevations and depressions on their circumference.
l, 10*d*. Drawing.]

A.D. 1868, April 23.—N° 1327.

OUSE, **John**.—(*Provisional protection only.*)—"Improvements in the manufacture of tailors' or
irons."

The object of this invention is to heat tailors' or "goose" irons by coke, or charcoal, or other fuel, instead of by an iron or other metal heater, as is now customary.

The iron may be of the usual or of any other desired shape, and by preference its top or lid is hinged or jointed on the body of the box at the front end, or at the back thereof, or at either side thereof. But if required, the said top or lid may be made to take on and off in the manner now customary with box irons with heaters.

My improved iron is furnished with a handle similar to that applied to box irons with heaters. Underneath the said handle is affixed a shield or guard of tin or other metal, which is to intercept the radiated heat.

The grating which holds the fuel may either be of the ordinary tunnelled kind as now used in other descriptions of charcoal irons, or, if preferred, the said grating may cover the whole of the bottom plate, and it is then provided with feet, upon which it stands.

[Printed, *4d.* No Drawings.]

A.D. 1868, April 23.—N° 1328.

BUSH, James, and WELCHMAN, Henry.—(*Provisional protection only.*)—"An improved spring "fastening for brooches and other similar dress fastenings."

The pin or tongue is of the usual construction, one end being hinged upon the back of the brooch in the customary manner; but the essential part of our invention consists in providing at the other end of the back of the brooch a box, upon which is caused to work a moveable bolt or slide actuated by a flat or other suitable spring contained in the said box. When it is desired to fasten the brooch or other dress fastening, the free end of the pin or tongue is pressed downwards upon a bevelled part of the said moveable bolt or slide in such manner as to cause it to recede until the point of the said pin or tongue takes into the shield or guard, hereinafter described, which is underneath the said bolt or slide; and the tendency of the spring being to keep the said bolt or slide closed over the point of the pin, the fastening is complete. When it is desired to unfasten the brooch or other dress fastening, the bolt or slide is withdrawn by means of a thumb piece provided thereon.

An important feature in our invention is to provide a shield or guard into which the point of the pin or tongue may take and be thereby secured from injury; and in this manner injury to the fingers of the wearer of the brooch or other dress fastening is also prevented.

[Printed, *4d.* No Drawings.]

A.D. 1868, April 23.—N° 1329.

STANTON, James Monroe.—(*Provisional protection refused.*)—"Improvements in furniture castors."

I use a socket or plate of the ordinary form to attach the castor to the leg or other part of the piece of furniture to be supported, and I make this socket or plate of brass, malleable cast iron, or other suitable material. To the lower end or side of this socket or plate I connect an inverted hemispherical cup (forming the said cup by preference of one piece with the socket or plate), the said cup forming either a perfect hemispherical cup or being perforated or skeleton shaped.

The lower edge or circumference of this cup is provided with three or more claws projecting downwards, and I place a ball or sphere of glass, porcelain, earthenware, metal, or other suitable material in the cup, and then bend the claws inwards so that they embrace the ball immediately below its diameter or largest circumference, and thus prevent the ball from falling out of the cup.

[Printed, *4d.* No Drawings.]

A.D. 1868, April 23.—N° 1330.

STIDOLPH, George Frederick, STIDOLPH, John, and SIMPSON, Thomas.—"Improvements "in brushing and sweeping machines."

This Provisional Specification describes making a brushing or sweeping machine with a space left without hair or other material in the centre of the length of the cylindrical brush; against this portion of the brush is pressed the periphery of a disc or wheel of larger diameter than the axle of the brush, which when the machine is being used runs on the ground and transmits a rotary motion to the brush, thus allowing the ends of the brush to be used against walls. In some cases more than one disc is employed. In some cases short lengths of india rubber are used to form the revolving brush. Other details are also described.

[Printed, *1s. 4d.* Drawings.]

A.D. 1868, April 23.—Nº 1331.

Alexander Melville.—(*A communication from François Jobard.*) — (*Provisional protection*
Improvements in apparatus for transmitting and multiplying motive power."

provements consist in transmitting motion to two fly wheels mounted on separate shafts, on one
ch shaft a fixed and loose pulley are mounted, the loose pullies being at the extremities and
The fixed pullies are thrown into gear with the motive power alternately by means of a band
l from one to the other. At the same moment that the one fly wheel is thrown into gear with the
wer the other which has just received motion therefrom is thrown into gear with the shaft to be
means of clutches and suitable gearing, the first fly wheel being at same time thrown out of gear
rods connected together and operated by a lever acting on the clutches of each fly wheel and on
g band at the same moment. The shafts turn on rollers to decrease the friction.

1, 4*d*. No Drawings.]

A.D. 1868, April 23.—Nº 1332.

RONG, Joseph.—"Improvements in crossings, and in switch apparatus to be used with the
nent way of railways."

is purpose the top and bottom faces of double headed reversible crossings are formed of cast steel,
e interior is of cast iron, and this is done by first pouring into the mould a sufficient quantity of cast
rm one face with the rails, and before this sets a suitable quantity of iron is poured in to form the
er, then a suitable quantity of cast steel is run in for the second face with the rails thereon.

gle headed crossings the working faces and rails are formed of cast steel and the bottom of cast
imilar manner to that before described.

ention relates, secondly, to improvements in switch apparatus to be used with the permanent way
s. For this purpose the switch rail is connected with a lever in the usual manner, but in the
of such lever is a slot from which is suspended a suitable weight which is capable, when allowed,
ing from one end to the other of the slot. Upon the lever just described is mounted a locking
, which when raised by acting upon the upper end thereof releases the weight and allows it
rom the higher to the lower end of the slot, and then when the locking apparatus is lowered or
fall the weight is prevented returning from the end of the slot in which for the time being it is
o act.

s causing the weight to act on the one side or the other of the axis of motion of the switch lever
is held in the desired position until again set by the attendant in charge.

1, 8*d*. Drawing.]

A.D. 1868, April 23.—Nº 1333.

Villiam Robert.—(*A communication from Philander Hayden Standish.*)—"An improved steam
or."

ect of my invention is to provide an improved locomotive steam cultivating machine so constructed
ower is transmitted directly from the engine to ploughs or cutters either by belts or by gearing,
reatly lessening the power needed for traction. The said invention consists partly in a novel
operating the ploughs which rotate in a horizontal plane and plough transversely to the travel
chine, the earth being throughly broken up or pulverized so as not to need any further cultivation,
g being done also at the same time. The ploughs are attached to a moveable supplementary
ich by the proper mechanism may be easily raised and lowered to regulate the depth of the cut, or
be elevated so as to entirely clear the ground when necessary, while by a simple device the cutters
unted as not to be broken by stones or other obstructions.

1, 8*d*. Drawing.]

A.D. 1868, April 23.—Nº 1334.

K, Charles Brown, and HARDICK, John. — "Improvements in direct-acting engines and
"

ton rods of the water cylinder and the steam cylinder are connected together. The improvements
, to the valves of the pump, which are prismatic or cylindrical and introduced endwise through
in the sides of the valve chest; movable caps cover the openings. 2nd, the valve of the engine
with a small cylinder upon it in which is a stationary piston and rod; the valve is moved by
mitted into this cylinder by a secondary valve that receives motion from the piston rod of the

d, 8*d*. Drawing.]

A.D. 1868, April 23.—N° 1335.

REID, JOHN.—" Improvements in the manufacture of casks and other similar articles, and in the machinery " or apparatus connected therewith."

The feature of novelty which constitutes this invention is the special arrangement and construction of machinery or apparatus whereby the staves of barrels or casks can all be cut to the proper curve and afterwards bent by heat, their ends dressed, and the barrel or cask built up and trussed all under one operation.

[Printed, 1*s*. Drawing.]

A.D. 1868, April 23.—N° 1336.

ROGERS, JOSEPH.—" Improvements in the preparation and utilization of certain vegetable and bituminous " products."

My improvements relate to the utilization and employment of certain residual products obtained in and resulting from the treatment of vegetable oils, such as cotton seed oil, and from the distillation and refining of crude mineral and bituminous products, such as coal oil and petroleum.

Now, my invention consists, firstly, in the admixture of the before mentioned residual products or of any two or more of them in such proportions as shall produce a material or materials which shall possess such qualities as shall render them applicable to the purposes required.

As an instance, I have found that when I employ a mixture consisting of about two parts by weight of the solid residium resulting from the treatment of vegetable oils, such, for example, as the solid foots from cotton seed oil, and of about one part by weight of the fluid residuum or liquid foots resulting from the rectification of petroleum or coal oil, I obtain a material capable of being employed for coating or impregnating woven fabrics, fibrous materials, ropes or yarns, and paper. Also for the coating of wire for telegraphic purposes, iron and metallic work, ships' holds and bottoms, wood, and masonry; and when such before mentioned mixture, compound, or material has been subjected to the action of solvents, such as benzole or coal tar naptha, a solution is obtained which may be employed as a covering or varnish for iron and metals, wood, masonry, textile and woven fabrics, fibrous materials, and paper.

My invention further consists in the admixture and incorporation with the compound or compounds obtained in the manner hereinbefore mentioned of gutta percha or of india rubber, or of mixtures thereof, for the purpose of obtaining a material suitable for the covering or coating of telegraphic wires, or for the coating or covering of ships' bottoms or holds of ships and of iron or metal work, of wood or masonry, of paper, and of fibrous materials, and of woven fabrics.

The proportions which I have found to give good results are about six parts by weight of the mixture or compound herein-before mentioned with about one part by weight of gutta percha or of india rubber, or with about a similar proportion of an equal mixture of the same; and when such before mentioned mixture, compound, or material has been subjected to the action of solvents, such as benzole or coal tar naptha, a solution is obtained which may be employed as a covering or varnish for iron and metals, wood, masonry, textile and woven fabrics, fibrous materials, and paper. Although I have given proportions which I have found to give good results, these may be varied according to the purposes to which the resulting compound or compounds are intended to be applied.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 23.—N° 1337.

CASSON, JOHN.—" Improvements in machinery for sawing wood."

This invention relates more especially to that class of sawing machinery in which a circular saw is used.

The said invention consists in the following construction and arrangement of parts, whereby the wood is fed to the saw continuously, and the top of the bench can be raised or lowered as required.

The standards carrying the saw spindle are cast in one piece with the bed-plate of the machine. The raising and lowering of the top of the bench is effected by means of a screw, worm-wheel, worm, and hand wheel, and the said top is steadied by guides.

The wood is fed to the saw by means of a revolving roller carried by an adjustable radial arm mounted on a vertical shaft, the said arm being caused by a weighted arm and parts in connection therewith to press the said roller forcibly against the wood, so that as the said roller revolves it guides and carries forward the said wood. The said roller receives motion from the saw spindle by means of band pulleys and intermediate gearing. When cross cutting or other work requiring a clear bench has to be done, the feed roller and the parts carrying the same can be removed.

The improved feed apparatus is capable of separate application to the benches of ordinary sawing machinery.

[Printed, 1*s*. Drawing.]

of the wheels of the cab or other vehicle, to the diameter of which wheel it is made to bear some definite proportion, such two pulleys being connected by an endless elastic band, by preference, wholly or partly of india rubber.

Another part of the invention consists in the construction of registering mechanism in which a weighted-dial with graduations, denoting miles and fractions of a mile, or the corresponding fares, has a worm wheel on its circumference in gear with a worm driven through speed reducing gear from the cab wheel, either by the above described arrangement or otherwise, the worm and worm wheel being held in gear by a spring, and so arranged that the cabman, by pulling a string, &c., can draw them out of gear so as to allow the weighted dial to turn into zero position.

In connection with the dial is a stationary pointer, past which the dial revolves, and thus enables the distance travelled to be indicated by the pointer. The dial may be made to indicate only fractions of a mile and the number of miles travelled be indicated by a second dial or a weighted cylinder, receiving motion from the driving gear with which both the dial and cylinder may be connected by a clutch apparatus. Another disc fixed to the driving gear indicates the entire distance travelled by the cab in one day. An alarum may be struck by the mechanism at the end of every mile or part of a mile, and also by the act of setting the apparatus to zero.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 24.—N° 1343.

BROWN, Charles.—" Improvements in apparatus for baking, also applicable to hot pressing, and to " other heating and to cooling purposes."

Two or more plates or castings, with transverse internal channels, and a longitudinal channel at each side, are placed one above another, and steam, hot water, or other heating or cooling medium is caused to circulate through the channels.

The plates or castings can be moved nearer to or further from each other, as required by the mechanical arrangements described.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 24.—N° 1344.

JOHNSON, John Robert.—" Improvements in repeating fire-arms."

The invention consists of certain improvements in the construction of those repeating fire arms in which the cartridges are contained in a tubular magazine placed parallel to and immediately beneath the barrel.

In constructing arms of this description it has been usual to effect the various motions to eject the spent cartridge and to reload the barrel by means of two toggle joints of a complicated form and expensive construction in connection with a lever beneath the trigger guard or forming part of it. When these motions are completed the two arms of the toggle joints are in nearly a straight line, abutting at one end upon a recess formed in the stock or metal frame of the gun attached thereto, and at the other upon a piece forming a projection upon the breech pin, the force of the discharge being sustained upon the various parts of such toggle joints.

Now the object of this invention is to effect the motions above described by simpler and less expensive mechanism, and to cause the breech pin to bear directly upon the stock of the gun at one end while closing the breech at the other, so that the force of the shock may be received and born by the direct thrust of the rod or bolt from the breech pin upon the stock, and not through the indirect intervention of the arms or levers of the toggle joints which are entirely dispensed with.

To effect this the breech pin is formed of two parts, the first, that in contact with the barrel, has a simple to and fro motion, the second attached to the former by a socket and pin, in addition to this motion, has a circular motion of about one fourth of a turn. A handle projecting from this at right angles enables the hand to effect these motions directly and without a lever.

Two studs project from the end of this piece, and when the required circular motion is given to it by the lever these abut upon a steel plate let into the stock and wedge up the breech pin upon the flanch of the cartridge, thus closing perfectly the breech of the barrel by direct contact between the stock and the barrel through the breech pin. Both pieces of the breech pin are perforated so as to allow the passage of the needle which fires the cartridge, and this can be either a simple central pin when for central fire cartridges, or may terminate with a forked head when the percussion powder is in the rim of the cartridge.

The vertical motion of the carriage block is given by a bell crank lever. The upward motion of this lever is given by a stud on the breech pin striking the shorter arm of the lever at the proper moment. Its action may be aided by a spring placed beneath the longer arm, in which case a catch retains the lever when the spring is forced down, and this catch is released by the stud aforesaid. The downward motion of the lever

by one of the studs which support the breech pin during the discharge, acting upon a wedge fixed
smaller arm of the bell crank.
agazine may be charged in any suitable manner.
ew arm is used in the following manner :—Assuming it to be charged, the trigger is pulled, when the
falls upon the head of the needle and explodes the cartridge. The handle of the breech pin now
zontal position is seized, the thumb pressing a spring, which releasing a stud allows the bolt to be
by bringing the handle to a vertical position by means of about a quarter of a turn.
cting this the handle moving upon an edge of the frame gives a very slight longitudinal backward
o the whole of the breech pin, which thus slightly withdraws the shell of the cartridge to the extent
otion ; the studs abutting upon the salient parts of the wedges on the steel plate fixed on the stock
released, and the pin can then be drawn back, bringing with it the shell of the spent cartridge and
me time cocking the gun. The stud upon the pin then strikes the catch, releasing the bell crank
hich then rises suddenly, being acted upon not only by the spring under the longer arm, but by the
on the shorter.
ell crank causes the carriage block to rise, ejecting the shell and bringing a fresh cartridge opposite
of the barrel. The breech pin is then thrust forward, pushing the cartridge into its place in the
The handle is then brought horizontal by a quarter turn or thereabouts; the studs upon the pin
contact with the wedges upon the steel plate on the frame or stock, forcing the breech pin firmly
e cartridge, and at the same time acting upon the wedge fixed on the shorter arm of the bell crank,
forced down, carrying with it the carriage block.
un is then ready to be again discharged.
ted, 1*s*. Drawing.]

A.D. 1868, April 24.—N° 1345.

LL, Richard, NUTTALL, Thomas, and BARBER, Benjamin.—"Certain improvements in
anufacture of woven fabrics termed 'quiltings' and 'toiletings' and for similar descriptions of fabrics."
ovelty of the invention consists in a novel arrangement of the warp threads and healds constituting
called the "tie-up," which will be intelligible to the practical weaver.
ted, 8*d*. Drawing.]

A.D. 1868, April 24.—N° 1346.

ER, Daniel Cole.—"An improved wire tie for securing bales of cotton or woollen goods and
merchandise."
ie is formed of iron or other wire, and a hook of like material is secured to one end of the tie, at
ther end is an eye or loop. When the tie has been arranged around the bale the two ends are united
ting the hook into the eye.
ted, 6*d*. Drawing.]

A.D. 1868, April 24.—N° 1347.

SON, Charles Weightman.—"Improved means of preventing incrustation in boilers and other
s in which water is heated."
nding in the water in a boiler a plate or body of metal or other suitable electrical conductor, and
g such conductor to the boiler or vessel, establishing an electrical current and thereby preventing
tion and facilitating the production of steam. Charging the shell of the boiler or vessel in any
nt manner with static or current electricity, produced or developed independent of the boiler or
d the liquid therein. Fixing an electrometer on the boiler and in communication with the electrical

ted, 4*d*. No Drawings.]

A.D. 1868, April 24.—N° 1348.

RD, John, and BUXTON, George.—"Improvements in the rails and chairs of railways, and in
ethod of adapting railway chairs to rails."
invention consists in a method of adapting rails to chairs whereby the usual wooden wedges are
d with.
ted, 8*d*. Drawing.]

A.D. 1868, April 24.—N° 1349.

ERILT, James.—(*Provisional protection only.*)—"Improved apparatus for scoring or marking
iards or other similar games."

The invention consists in adapting to the moveable rollers which carry the numbers or spots (as the case may be) for marking the game, gearing for driving index wheels, which wheels are marked with numbers corresponding to the games to be recorded. Stationary fingers or pointers set over the faces of the index wheels show their progress of rotation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 24.—N° 1350.

RYLAND, WILLIAM HAWKES.—" Improvements in fastenings for articles of dress and jewellery."

According to this invention the fixing of the hinged bow of the fastening to the body of the fastening is effected by a sliding bar situated in a small chamber in the body. In this bar and opposite the opening in the body through which the snap end of the bow passes is a rectangular hole, the upper or outer edge of which engages in the said snap and fixes the bow to the body. The bar is pressed inwards and kept engaged with the snap by springs pressing on its inner end. By pulling outwards the end of the sliding bar situated at the edge of the body of the fastening the said bar is released from the snap of the bow and the latter may be raised and the fastening detached from the dress.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 24.—N° 1351.

DEWAR, JAMES.—" Improvements in making and preserving manure."

Improvements in making manure from fish by drying and grinding same, also by mixing fish with blood viscera, offal, draff, and dreg, and drying and grinding same; and in preserving for manure animal and vegetable substances by subjecting same to the action of sulphurous acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 24.—N° 1352.

BARTRAM, WILLIAM. — (*Provisional protection only*.) — " Improvements in the manufacture of " cartridges."

According to this invention, which relates to that description of cartridge known as the central fire detonater, a nipple is applied to the interior of the base of the cartridge, and an ordinary percussion cap is used to ignite the powder.

The cartridge case may be made of brass or other metal, or the base may be of metal and the cylinder of paper.

The nipple is fixed by a screw or otherwise within a tube or socket attached within the metallic base, and extends to the central part of the powder or to any other distance at which the ignition is required to be effected.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 24.—N° 1353.

BARTRAM, WILLIAM.—" Improvements in apparatus for filling, closing, and re-capping cartridges."

According to this invention a moveable case is made to slide to and fro in an outer case, both being open at the sides; the moveable case carries cylinders which are brought alternately under a hopper containing powder or shot, and over a series of fixed funnels which are placed within the cartridge cases to be filled, and thus a supply of powder and shot is rapidly and accurately given to the cartridge cases.

The charge may be varied by the adjustment of the top plate of the case and by the sliding of the cylinders one within the other.

The closing is effected by the application of a lever to the barrel containing the cartridge, and by a pressing tooth, which holds the metal of the cartridge firmly while the case is turned down to the wad.

The re-capping apparatus consists of two cylinders on a base, to one of which a lever is jointed: to the other a sliding tube is attached having an opening at the top of a conical form, the under cylinder being provided with a needle point; the cartridge being placed on the latter and pressed down by the lever, the detonator is forced out by the needle, and a new detonator being inserted the cartridge is transferred to the other cylinder and the lever is brought over and drives the detonator home.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 24.—N° 1354.

WELCH, GEORGE AUGUSTUS.—" Improvements in apparatus for the preservation of li
" sea."

This invention consists of an airtight casing having a central space open f
reception of the person to be saved. Said casing is enclosed in an open fra

at the bottom of the casing open to the water. The apparatus is also fitted with one or more
sockets each containing a telescopic signal staff, each section of the staff being connected to the
of the section next above but one by a cord passing over a pulley at the top of the section next
The staff is raised by a weighted rod in the bottom of the socket connected to said staff by by a
assing over a pulley at the top of the socket.

s are attached to facilitate entering the buoy from the water and to support persons holding on.

uoy is suspended from two hollow davits, each containing a sliding bolt which takes into a socket
uoy. A cup on the davits above each signal staff prevents the latter rising into position until the
lowered.

taff also carries a signal or port fire pan fired by a line and friction tube, which may either be ignited
e buoy is lowered or cast off therewith, the means of igniting the same thus remaining at the
d of the person in the buoy.

ted, 1*s*. 6*d*. Drawings.]

A.D. 1868, April 24.—N° 1355.

ARD, Julian.—" Improvements in preparing and dressing ores and minerals, and in the machinery
pparatus employed therein."

invention relates, firstly, to an improved stone, ore, or mineral breaking or crushing machine; and
of the use and employment of a series of moveable teeth or segments made of steel or other metal
pon and secured in blocks or rollers containing suitably formed grooves or recesses for the reception
teeth or segments and admitting of their ready removal or renewal without involving the removal of
ks or rollers from their shafts or the shafts from their bearings. Motion may be imparted to these
r blocks by gearing and in the usual manner. Secondly, it consists of imparting a lateral and
ial motion to crushing rollers, and which may be effected by means of a cam or eccentric secured to
t or shafts on which the rollers are secured, and which are so placed and arranged that its differential
comes in contact with a fixed stud or pin in the course of its revolution. The object of which motion
se the surfaces of such rollers to wear out more evenly.

ly. My invention relates to an improved method and means of sizing or dividing the materials, and
of combining plain inclined surfaces with inclined perforated plates or sieves, over which the material
erated upon is passed, and by which a more perfect result is obtained. The whole of the perforated
nd plain inclined plates being placed and arranged in a suitable framing common to the entire
employed and leading into separate divisions or compartments in which the materials are deposited.

hly. My invention relates to an improved method and means for washing or separating different
erals from each other and also from their matrices and other impurities. One modification of carrying
part of my invention consists of the following arrangements and means:—In a cylindrical or other
formed vessel or cistern, which is secured to a common framing, I place a chambered [illegible]
h is secured a perforated top or sieve; or in lieu of the moveable chambered bottom [illegible]
and a moveable perforated plate, either being free to move watertight upwards and [illegible]
ern; this moveable bottom or plate is placed upon and attached to a [illegible]
asses watertight through the head of a cylinder placed directly underneath [illegible]
iston and the lower cylinder are furnished with suitable cocks and [illegible]
f water, atmosphere, or other fluid as may be required, and which may [illegible]
ient head pressure until required. When any material is to be treated [illegible]
e bottom or plate is supposed to be at the bottom of the cistern and [illegible]
ater is permitted to flow into the lower cylinder and through [illegible]
o the cistern, passing through the material, which it forces up [illegible]
on and agitation until the whole becomes arranged according [illegible]
lone or water and atmosphere may be employed to obtain the [illegible]

When the materials are sufficiently acted upon they are [illegible]
ed plate or bottom is raised by closing the valve in the [illegible]
which will have the effect of the water pressing upon the [illegible]
it, with the moveable bottom and the material in the [illegible]
he attendant to remove the whole or any portion of the [illegible] he
ated plate connected therewith can now be lowered [illegible]
itting the fluid in the lower cylinder to [illegible]
to separating machines, and [illegible]
machine so arranged as to [illegible] livered by the

window blinds. By this arrangement the water can be propelled or forced in any desired line from the vertical, which will have the effect of propelling the material gradually towards one end of the machine, and thus become self acting in its operation. In this arrangement the sieve is stationary and placed in a frame in relation to the cistern that all the water comes through it.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 25.—N° 1356.

CASHIN, Thomas Frederick. — (*Provisional protection only.*) — "Improvements in apparatus for "actuating and regulating the working of railway signals, and the points and switches of rails (a part of "which is applicable for other purposes) and also in the mode of fish-jointing rails."

The main features of novelty which constitute the invention are, for the switch-levers in substitution of "switch-boxes," having the fulcra borne by vertical projections from the base-plates, and the balance weight on each adjusted on an arm projecting from the lever or on the lever itself; the slot in the attachment below the fulcrum in the reversing levers; the compound locking-levers with the slot and pin movement; and the adjustable oscillating jaw connecting the lever with a crank affixed to the base plate.

For the station-levers: having radial projections from the fulcrum of the first mover, which cause the points or signals to be moved by acting alternately on opposite sides of an eccentric curve or fork in the top of the lever connected with them; and the interlocking by means of slotted links and projections from a rod which partially revolves.

The arrangements described for permitting trains to run behind the points at junctions without derangement to the locking-gear; the contrivance for drawing the points home to the rails and crushing any compressible matter which might otherwise prevent them from closing; and the mode of securing the bolts and increasing the rigidity of fish-joints are also novel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 25.—N° 1357.

HUTCHINSON, William Nelson.—(*Provisional protection only.*)—"Improvements in apparatus for "receiving and absorbing or checking the recoil of ordnance."

The recoil of the gun drives back pistons in fixed cylinders containing air or other fluid so as to compress the fluid; the rods of the pistons are connected to the trunnions or other part. A catch holds back the gun at the end of the recoil, and after loading the catch is released, so that the power of the compressed fluid will assist in running out the gun. Sometimes elastic cushions are used to assist the air cylinders in absorbing or checking the recoil.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 25.—N° 1358.

MARSON, Gervase.—(*Provisional protection only.*) — "Certain improvements in the method of and "means for retaining the outer ends of tapes, ribbons, and other similar narrow fabrics and paper."

The novelty of the invention consists in the application and use of metallic wire or other suitable material or thin plate employed as a binding or retaining band, cincture, or loop so bent or formed as to embrace the loose end of the tapes, ribbons, &c., and also the fold or layer, or folds of tape or ribbon beneath such loose end, so that as the loose end (which projects slightly beyond the said band or cincture) is pulled to unwind the tape or fabric, the band runs or slides upon the lower fold or layer and constantly holds the upper layer on to the lower.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 25.—N° 1359.

CRAVEN, Joseph.—(*Provisional protection only.*)—"Improved means or apparatus for producing the "'barrel fringe' or tassel fringe on shawls."

The novelty consists in,—

The employment of a pair of nippers or jaws fixed upon suitable framework, one part being screwed to receive and give lateral motion to a pulley to which is attached a thread carrier and guide, rotary motion being given thereto by driving band or strap. Also in the application of a needle or hook caused to slide by the lateral motion of the pulley, and pass the ends of the wrapping thread through the coils thereof, so as to secure the said ends.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 25.—N° 1360.

HOLDING, Joseph, and HOLDING, Richard.—(*Provisional protection only.*) — "Improvements in "healds employed in looms for weaving."

The novelty of the invention consists in forming the wire supports for the warp threads in metal healds ployed in looms for weaving in two parts or lengths of wire, one end of each being connected with the nds of the top and bottom "staves" or "shafts," the remaining or unconfined end of each [*wire being pled or connected together so as to**] form eye links, through which the warp threads pass and are pported thereby, rendering them more durable and lasting.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 25.—N° 1361.

ENCE, PETER.—(*Letters Patent void for want of Final Specification.*)—" Improvements applicable to the purification of gas used for illumination."

This invention consists in purifying gas by means of proto-silicates and proto-carbonates of iron.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 25.—N° 1362.

OCOCK, ALFRED WILLMER.—" Improvements in working valves of steam and other engines."

The putting in operation by the action of the piston the power of a spring or other mechanism which an only move the valve when released by the piston or moving part connected therewith. Such part is rovided with a stop or its equivalent which holds the valve in its place until it is released, thereby allowing he power to move it.

[Printed, 10*d.* Drawing.]

A.D. 1868, April 25.—N° 1363.

OCKER, RICHARD. — (*A communication from Theodore William Heinemann.*) — " Improvements in purifying, seasoning, and preserving wood, and making it water and fire proof."

The invention consists, first, in purifying, seasoning, and preserving wood by, first, freeing it from ubstances liable to spontaneous decay, by boiling it in a weak solution of carbonate of soda or other alkali, nd afterwards impregnating it with liquified resin or soda and potash-water glass, or their equivalents, by eans of high steam pressure. Second, the impregnating wood with any of the substances specified, or any ther substances, by means of high steam pressure, when the steam is generated and superheated in the ame boiler or retort in which the wood and impregnating substances are contained, and subjected to steam ressure. Third, a method of subjecting any objects or substances to high steam pressure, when the steam s generated and superheated in the boiler in which the objects or substances are contained and subjected to igh steam pressure.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 25.—N° 1364.

DRAKE, CHARLES.—" Improvements in constructing concrete buildings, and in apparatus used therein."

According to this Provisional Specification in constructing concrete buildings flanged plates of iron enamelled or glazed on the face are employed in conjunction with iron uprights or otherwise; they are held together by bolts and nuts, and connected at the front and back by metal straps or ties. Methods of carrying the scaffolding, and methods of constructing chimnies are also described.

[Printed, 2*s.* Drawings.]

A.D. 1868, April 25.—N° 1365.

CLARK, ALEXANDER.—(*A communication from S. Lloyd Wiegand.*)—" Improvements in steam generators " and furnaces."

The boiler is composed of a series of tanks placed horizontally side by side, to the underside of which are secured tubes closed at their lower ends. Inside each of said tubes is a smaller tube extending up into a portion of the tanks, upon which are placed spiral fins or feathers to produce a rotative motion of the ascending water columns contained in the annular spaces between the internal and external tubes. This motion so diffuses the current as to prevent the bubbles of steam interfering with the water entering the upper ends of the smaller tubes, which ends are made with mouths either tapered or expanded, and so directed towards the external current as to collect a supply of water from the revolving current.

Above these tubes is a perforated plate to distribute the bubbles of steam rising from the tubes. The furnace is arranged with a chamber above the grate in which the combustion of the gases is effected, the flame and gases passing between the several tubes to the chimney.

[Printed, 1*s.* Drawing.]

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* The words "wire being coupled or connected together so as to," are found in the copy of the Abridgment delivered by the pplicants, but do not appear in the original Abridgment.

A.D. 1868, April 25.—N° 1366.

PARKES, Alexander. — (*Provisional protection only.*) — " Improvements in the manufacture of " varnishes."

According to this Provisional Specification compound solvents are used consisting of rectified mineral naphtha together with alcohol or wood, spirit vegetable naphtha or tetrachloride or bichloride of carbon or turpentine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 25.—N° 1367.

ATKINS, James.—" Improvements in ornamenting sheets or plates of metal."

This invention consists in ornamenting sheets or plates of metal by taking a pattern or design consisting of an engraved, embossed, or perforated plate of metal or other hard material, placing the pattern upon the side of the sheet metal to be ornamented, and a sheet or plate of tin or other soft metal on the opposite side or back of the sheet metal, and passing the whole through a pair of plain rolls. By the pressure of the rolls the pattern is impressed upon the sheet metal, the soft metal at the back of the sheet metal constituting a yielding surface which permits the pattern to be forced more effectually into the sheet metal than if the sheet metal were supported by an unyielding surface. The ornamental designs produced upon the sheet metal may either be sunk or in relief.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 25.—N° 1368.

PEMBERTON, Thomas, and HUGHES, Thomas.—(*Provisional protection only.*)—" Improvements in " supports for fire-irons."

This invention consists in suspending or hanging fire irons vertically by means of a single or double horizontal forked piece, with which the head of the fire iron or a shoulder on the fire iron engages by a sliding motion. The forked piece may be fixed on the top of a rod, or standard, or to the fender, or in a socket in the fender or floor. Or the fork piece may be fixed in the wall, or chimney piece, or fire place. The open end of the fork may be made higher than the other end, so that if the fire iron is introduced carelessly into the fork, the said fire iron slides by its own weight into a safe position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 25.—N° 1369.

HILLS, Frank Clarke.—" Improvements in the manufacture of gas, and in the purification of gas " liquor, and in utilizing gas tar and crude hydrocarbon oils, and in furnaces for effecting the combustion " of the said gas tar or hydrocarbon oils."

This invention relates, firstly, to the purification of gas from sulphuretted hydrogen, carbonic acid, and the bi-sulphide of carbon.

This is effected by passing the gas through " gas liquor," which is purified and used in the following manner:—The said liquor is distilled in a series of stills placed one at a higher level than another, so that the said liquor will run through suitable pipes from one still to another. By this distillation sulphuretted hydrogen and carbonic acid are driven off. These products are conveyed to a furnace to be burned as far as practicable, and the waste products are passed to the chimney. The gas liquor when thus purified is applicable to a variety of purposes amongst others the purification of gas as hereinbefore referred to, and is run into tanks for use. The gas to be purified is passed through an ordinary scrubber containing coke, through which the purified gas liquor is run down to meet the said gas, which will thus be to a considerable extent deprived of its impurities. The purification of the said gas may be finished in the ordinary way. The invention relates, secondly, to the utilization of gas tar, or such crude hydrocarbon oils as are applicable for burning in furnaces, by burning it or them in retort or other furnaces (constructed for or adapted to the purpose as hereinafter described) in order to effect a partial saving in the fuel used. When tar is used it is first distilled by a continuous distillatory process in order to obtain from it coal naptha. The furnace in which the tar or crude oil is to be burnt is constructed as follow:—That part of the furnace containing the solid fuel used may be of the ordinary form. The ash-pit has a sloping floor, and is closed by an air-tight door, such air as is required in the ash-pit being admitted through a flue at the back or middle of the said ash pit. A transverse opening or slot communicating with the ash-pit is formed in the dead plate of the furnace. The tar or oil is run through a pipe into the front part of the ash-pit, and runs down the sloping bottom ınd is distilled by the heat of the fire above part of the vapour evolved passing through and being the said fire, and part passing through the opening in the dead-plate and being burnt as it passes said fire. A portion of the said vapour may be burnt in the ash-pit by admitting air thereto. eferred to make the furnaces with **V** shaped receptacles (without fire bars) for the solid fuel.

ıd, 10*d*. Drawing.]

A.D. 1868, April 27.—N° 1370.

AN, Edward Primerose Howard.—(*A communication from Lancelot Hope Everitt.*)—" Imıents in telegraphy, and in the construction and arrangement of apparatus for communicating and intelligence."

ıvention consists in evoking different tones of sound from the atmospheric air by metallic machinery ıtus, and dividing these tones into certain orders of sound capable of being formed into symbols, e construction and arrangement of apparatus for producing, collecting, reflecting, and transmitting ıolic sounds through naked wires free from insulation. The apparatus consists of two acoustic , placed respectively at the transmitting and receiving stations, and connected by a conducting wire. teries are constructed of metal, the signals being produced by striking a portion of the apparatus sharply, according to a pre-arranged code, whereby the sounds are divided into different orders. nals are communicated by the conducting wire and interpreted by the auditor at the receiving

ovelty of the invention consists in the methods of telegraphing, and the construction and arrangethe apparatus employed.

ıd, 2*s*. 4*d*. Drawings.]

A.D. 1868, April 27.—N° 1371.

)RTH, James, and BAYLDON, George Wood.—" Improvements in boilers and furnaces."

ıvelty consists in,—

ucting boilers with oval flues, having vertical pipes fixed therein, arranged in intersecting or lines and the furnace placed outside thereof with water space, division, and openings through it. ıpers placed betwixt the fire boxes and the flue to be opened and closed alternately when firing.

ed, 10*d*. Drawing.]

A.D. 1868, April 27.—N° 1372.

RSH, Samuel.—(*Provisional protection only.*)—" Improvements in locks."

ling to this invention the bolt of the lock has jointed to it two arms, which arms are capable by turning eir joint of closing upon or separating from one another. The ends of these arms are turned at right angles. When the bolt is shot into the staple the arms described are opened by coming fixed stud on the lock case, and the turned out ends of the said arms are thereby made to hook in e with the said staple and prevent the lock being separated from the staple by the insertion of a etween the door and lock. On the withdrawal of the bolt the turned out ends of the arms ainst the edges of the staple and close the said arms.

ted, 4*d*. No Drawings.]

A.D. 1868, April 27.—N° 1373.

'I, Domenico.—"The manufacture of an armour or armour-plating material, applicable to other ses."

nvention is carried out as follows :—

raw material is used I prepare a liquid paste formed with a fecu.ous substance by dissolving about r of a pound of sulphate of alumina in solution, per two and a quarter pounds of farina ; the whole is ted in a large mortar and pressed under an hydraulic press, after which the piece thus prepared is lled, and pressed in a cast iron mould to obtain the desired shape.

brous or raw textile materials, the aforesaid preparation is placed on them in layers, and the materials submitted to the operations before described.

ed, 4*d*. No Drawings.]

A.D. 1868, April 27.—N° 1374.

RDANGE, Victor.—" Improvements in the construction and modes of connecting pipes or tubes tal or other material."

nvention consists in certain improvements in the construction of pipes or tubes of metal or other t.

material, and in the combination and arrangement of mechanism whereby such pipes or tubes are connected together.

The pipes or tubes are constructed with the respective ends thereof enlarged by means of terminal rings or flanges, made projecting, or hollow, or sunken, and either single, double, triple, or quadruple. The pipes or tubes are connected by having placed thereover rings of caoutchouc or other elastic material, and collars of steel or iron, such collars admitting of variety of form, and in the modes of securing and tightening the same by means of bolts, screws, wedges, keys, and hinges.

The novelty of the invention consists in the arrangement and combination of parts and mechanism employed.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 27.—N° 1375.

NISSER, Pedro,—" An improved explosive compound or safety blasting powder."

This invention consists in mixing a compound of nitrate of potassa or nitrate of soda, or both, with either chlorate or per-chlorate of potassa in the manufacture of an explosive compound for blasting.

Another mixture consists of a compound of saccharum album, or white lump sugar, and sublimated sulphur mixed either with either vegetable fibre, or charcoal, or both.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 27.—N° 1376.

BARNEKOV, Kiel Volmar.—" Improvements in breech-loading fire-arms."

The fire arm is provided with a cylindrical breech piece moveable on a centre pin below the barrel by means of a lever fastened to the breech piece which is cut out on its circumference to admit the cartridge and receive a cartridge extractor worked by the lever, and so constructed and arranged that by the operation of extracting the shell of the exploded cartridge the hammer is cocked to the first or second stop. The breech piece carries a pin for transmitting the blow of the hammer to the cartridge, and a pin with conical head and a spring for marking or regulating the three stopping positions of the breech piece, viz., 1st, its position for extracting the shell and cocking; 2nd, its position for putting in a new cartridge; and, 3d, its position when ready for firing.

A gun is particularly described in which the breech piece works between two plates and in a casing with openings for the passage of the cartridge and the movement and guidance of the lever. A two-armed lever is described, having its short arm attached to a forked extractor with wedge shaped points, and an extension working in a groove in the breech piece and guiding the extractor; also, cocking the hammer by striking on a lip thereon. The wedge points of the extractor passing behind the cartridge shell, loosen it after explosion.

The breech piece is turned to admit the cartridge and then to close the breech, the latter motion causing the spent cartridge to drop out. The conical-headed pin works in a cavity in the breech piece, and in three recesses corresponding with the stopping positions of the breech piece, thus regulating the latter's motions.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, April 27.—N° 1377.

CHAYTOR, Henry.—" Improvements in the rolling stock of railways."

This invention has for its object to facilitate the passage of rolling stock along railways and round curves by enabling the wheels to run round, independantly of each other, in lieu of securing two wheels on to the same axle as heretofore. According to my invention, I secure each wheel to an independant axle which extends about half way across the framing of the vehicle, meeting the corresponding axle of the opposite wheel in the same axial line (or each axle may be placed in a separate box). These axles are tapered to their inner ends and enclosed in a box common to both, and have a bearance at their inner ends in the said box and a bearance next the wheel also placed in the said box, above which latter bearance the chief sustaining springs of the vehicle are placed upon the said box. This box is made of two or more pieces of any cast, rolled, or suitable metal, or combination of metals bolted together. If desired, the axles may be extended through the wheels to afford a catch bearing to check any rolling tendency in the vehicles. And in order to prevent the said rolling tendency I attach short check chains, fastened one to each end of the said box and attached to the frame of the vehicle immediately above, which may be adjusted by screws, and which may perhaps suffice without the external bearing to prevent rolling.

The bearings in the said box are to be lubricated with oil or grease. When oil is used it is supplied from a small reservoir or well in the box by the rotation of the axles themselves, and which, after oiling the central bearances, flows along the axle boxes into wells adjoining the bearances next the wheels to be oiled therefrom in a similar manner.

The box is to be furnished with covered apertures by which to inspect the bearances at any time it may be wished to do so.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 27.—Nº 1378.

HOLT, Richard, BURLISON, Robert, and SAMPSON, Henry.—" Improvements in 'papering' " and 'pressing' in the 'finishing' of woven fabrics, and in the means or apparatus employed therein."

The object of the improvements is to substitute for the small sheets of paper laid between the folds of fabric in "finishing" woven fabric continuous sheets of paper or such like fabric, which may be strengthened by being combined with other fabric, and to accumulate such paper fabric with the fabric to be operated upon in alternate layers on an accumulating roller which is borne with weighted pressure against a feed roller to effect the "pressing."

The fabric and the paper are passed separately over cylinders which are preferred to be heated and arranged to act on both surfaces of each.

[Printed, 6*d*. Drawing.]

A.D. 1868, April 27.—Nº 1379.

PERKINS, Loftus.—" Improvements in the manufacture of wrought metal wheels."

This Provisional Specification describes making wheels entirely of wrought metal by screwing the spokes into the nave and tyre and then hammering or closing in the metal of the nave and tyre round the ends of the spokes.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 27.—Nº 1380.

SCOFFERN, John.—" Improvements in sheathing ships' bottoms and other surfaces exposed to the action " of sea water."

This Provisional Specification describes the first painting the surface to be sheathed and then applying over it sheets of paper or felt or woven fabric or similar material dipped in copperised ammonia; over this sheathing another coating of paint may be applied and a second layer of sheets.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 27.—Nº 1381.

PERKINS, Loftus.—" Improvements in tubular steam boilers."

This Provisional Specification describes screwing the ends of the tubes of tubular steam boilers into the plates or tubes which carry them, and afterwards hammering or closing in around the ends of the tubes the metal which surrounds the holes in which they have been screwed.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, April 28.—Nº 1382.

McDONNELL, Eugene.—" An improved concrete or cement."

This concrete or cement consists in a combination of ground chalk, ground stone, lime grit, shingle, and broken stones of all sizes and descriptions, vegetable or mineral pitch or tar, and ground burnt clay. The proportions of the ingredients will depend principally upon the fineness or coarseness of the concrete or cement to be used.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 28.—Nº 1383.

PEARSON, John, and PEARSON, Mason.—" Improvements in jacquard engines."

The novelty consists in,—

The construction and use in connection with double action jacquard engines of double hooked lifting wires and needles so formed as to act upon either of the hooked ends according as indicated by the pattern surface, or as to which cylinder is caused to actuate the said needles at any time, and thus place the hooks in position for either the ascending or descending griff or lifting bar as required.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 28.—Nº 1384.

BOUSFIELD, George Tomlinson.—(*A communication from Charles Bradley.*)—" An improved manu- " facture of hair seating, and for improvements in the mode of seaming or joining hair seating and other

" woven fabrics with a hair face, and strengthening the goods and facilitating the upholstering of the " same."

This Provisional Specification describes weaving hair fabrics in narrow widths from short hairs and then joining the narrow widths together in such a way as to show no joint or seam, and so produce wide widths of hair fabric equal to those heretofore made only from long hair.

It also describes weaving hair fabrics with stripes, rows, or ribs, either longitudinally or crosswise of the web.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 28.—N° 1385.

COX, GEORGE ADDISON.—" Improvements in carpets, sackings, checks, bed-ticks, or tickings, and other " similiar textile fabrics."

The feature of novelty which constitutes this invention is the printing of sackings, checks, tickings, and other similar fabrics with aniline colours in contradistinction to weaving in the colours as hitherto.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 28.—N° 1386.

JACK, ALEXANDER, the younger.—(*Provisional protection only.*)—" Improvements in reaping machines."

The feature of novelty which constitutes this invention is the arrangement and combination of mechanism whereby the cutters and delivery rakes can be thrown out of gear simultaneously and either two or three delivery rakes used as desired for the delivery of the cut corn from the platform.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 28.—N° 1387.

BAAL, ABRAHAM, and **GANN, CHARLES.**—(*Provisional protection only.*)—" Improvements in reefing " fore and aft sails."

This invention consists in employing a worm and pinion for reefing sails in lieu of the endless chain for giving rotatory motion to the boom and winding up the sails aforesaid, a thumbscrew being employed for throwing the same in and out of gear.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 28.—N° 1388.

DIETZ, ANDREW.—" An improved method or process of treating or preparing and refining glue."

The invention relates to a method of treating and preparing glue (after it has been made) in order to render its inferior kinds equal to the superior, to refine it, and also to reduce its liability to become sour, mouldy, or deteriorated.

The glue to be treated may be taken hot from the tanks in which it is made, or it may be taken after having been dried, in which case it is first soaked and heated.

A mixture of rosin and oil is mixed with the heated glue, and the mass caused to simmer and then left to cool and settle. Proportions mentioned as generally used :—To 1 lb. crude glue, about 3 oz. rosin and ½ oz. oil. The rosin and oil are melted and heated separately or together and thoroughly mixed together. Linseed oil may be used, but kerosene or some other hydro-carbon is preferred. Benzine may be used with the rosin. The prepared glue may be dried or kept fluid or semifluid. It may be thinned by water, and better preserved by adding carbolic or wood acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 28.—N° 1389.

WAUGH, HENRY.—" Improvements in apparatus for screening or separating grain, seed, and other matters."

The first part relates to a comb or cleaner for freeing the wires from any matters that may remain during the screening operation. This consists of a frame placed below the screen having a number of transverse bars, each provided with a series of teeth of watch spring steel or other material which project up through the wires and so keep them clear during the to and fro motion of the screen.

The second part relates to the arrangement of the wires of screens whereby grain, seeds, or substances of different sizes may be readily sorted in the same screen. To effect this I dispose the wires considerably closer together at one end than at the other. Below the screen and inclined sideways thereto I place a table with moveable transverse partitions forming inclined shoots in which the proceeds of the screening operation fall and are conducted to different receptacles according to their sizes.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 28.—N° 1390.

'ORTH, William—(*Provisional protection only.*)—" Improvements in sewing machines."
ivention relates chiefly to sewing fabrics prior to dyeing. The machine allows of the used thread
led off, tied together, and used over and over again, the knots being no detriment to its use.
ed, 4*d*. No Drawings.]

A.D. 1868, April 28.—N° 1391.

GILLE, Edward Alexander.—(*Provisional protection only.*)—" Improvements in obtaining
power, and in means or apparatus employed therein."
vention relates to novel combinations and arrangements of parts whereby the products of combus-
ddition to being employed to raise steam are ultimately mixed with such steam and employed in
ble manner to obtain motive power.
roducts of combustion are caused to enter a chamber in which a number of plates and troughs are
l in such manner that water which is allowed to enter at the top of such chamber in suitable
es is caused to fall on to the uppermost plate or trough from which it drops into the troughs or plates
ately below, and when such trough or troughs are filled with water the water begins to fall on to the
xt below, and thence into the next trough, and so on until it arrives at the lowermost troughs, whence
wed to fall through suitable overflow channels to the bottom of the chamber, where it is maintained
n level, there being suitable means provided to allow the water to flow off when it has exceeded a
vel.
roducts of combustion are caused to pass through zig-zag passages formed by the plates and
so as to give off such an amount of the heat contained therein as to reduce the temperature thereof
working point, and in doing so to raise a certain amount of steam which mixes therewith and
rovides a moist vapour to be used as the motive power to be employed in any well known manner.
er falling into the evaporating chamber may be supplied continuously thereto from a suitable
or it may be pumped into a suitable receiver, in which the pressure is maintained at the same point
the evaporating chamber by a pipe communicating therewith, as will be well understood, and the
so arranged that after the troughs have been filled and the required level of water is obtained in
m of such evaporating chamber only about the quantity of water is allowed to enter the evaporating
which can be continuously vaporized therein.
vention also relates to various arrangements for facilitating the use of coal or other gas, mineral
tar, and such like products, and coal as the fuel, the products of combustion from which are used in
tion with steam in manner before described.
ed, 4*d*. No Drawings.]

A.D. 1868, April 28.—N° 1392.

MLEY, John.—" Improvements in umbrellas and parasols, and in appliances to be used in con-
n therewith."
culiarities of this invention consist, firstly, in the simplicity of the joints of umbrella and parasol
btained by making both ends of the stretchers and the inner ends of the ribs of a hook formation.
se of the stretchers the hooks at one end are passed through holes made in the runner flanch and
sed, being covered by a second flanch if desired. The hooks at the other ends of the stretchers
d through holes formed in the "middle bits" of the ribs. The inner ends of the ribs are hooked
ing ferrule near the end of the stick of the umbrella or parasol, and may be kept equidistant by
projections on an upper and flanched ferrule, or by having their ends rolled flat and of such width
ill the spaces intervening on the ring between any one ring and those on either side of it. I also
ibs of tapering strength from the inner to the outer ends, making the inner end the strongest.
vent the umbrella or parasol from being turned inside out I stretch cords from a hook near the
ds of each rib to either hooks or an elastic ring on the "loose runner." Within and to such runner
a travelling guide wire which runs in a groove cut in the stick and prevents twist of the stretchers.
e umbrella or parasol is closed hooks near the ends of and within the ribs are caused to catch in
formed for the purpose on the outer end of the runner and so retain them without the necessity of
the umbrella or parasol up or placing an india rubber ring around the ends of the ribs.
ne cases I also hem or weave in the edge of the covering of the umbrella or parasol a strengthening
tube of india rubber either separately or conjointly.
ed, 4*d*. No Drawings.]

A.D. 1868, April 29.—N° 1393.

BABACCI, Gion Baptiste.—"Improvements in gas engines."

This invention consists,—

Firstly. In keeping distinct the parts generating power from those transmitting power, at the same time leaving the pistons which receive the impulse of the explosion free, and in keeping the motive piston fixed to the transmitting parts.

Secondly. In the means of causing the action partly of atmospheric pressure and partly of artificial pressure.

Thirdly. In making the engine double acting.

Fourthly. In the application of valves for maintaining the disequilibrium produced by the explosion.

Fifthly. In employing a compressed mixture so as not to increase the space of the explosive chamber, and so as to increase the effect of the explosion.

Sixthly. In employing a small pump for preventing the resistance to the passage of the air driven out by the explosion.

Seventhly. In employing an automatic regulator, which keeps the explosive mixture at a pressure equal to that of the engine.

Eighthly. In the means of causing the explosion to take place between two pistons acting in opposite directions to one another.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, April 29.—N° 1394.

ROBOTHAM, Samuel.—"Improvements in birdcages."

The bottom of the cage is formed by pressing parkesine into a die, and if required introducing the eyes or parts of fastenings at the time. The panels, fonts, seed boxes, and upright frames may also be made of parkesine. The metallic work of cages may be covered with electro deposits of metals or alloys.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 29.—N° 1395.

GRAY, James.—(*Provisional protection only.*)—"Improvements in coatings or coverings for preventing "the fouling to which ships and other structures are liable in sea water."

This invention relates to the fouling of ships and other structures in sea water, which fouling is principally caused by the adherence of barnacles and other marine animals. These animals obtain and retain their hold upon the surface of a ship's bottom by suction; and the invention consists in applying to the bottom or submerged surface of the ship or other structure a coating or covering of a porous nature, which covering will be permeated by the water, and on which the marine animals will be unable to form the vacuum, without which the sucking action will be ineffectual.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 29.—N° 1396.

COPE, Thomas, and COPE, George.—"Improvements in machinery for moulding, pressing, and "stamping Cavendish and other tobacco into any desired form by suitable die pieces."

To a suitable frame we bolt and key a turned face plate or table of any required dimensions, having a hole bored out on its centre to receive a turned bolt or spindle, or it may be fitted with slides for a travelling table; and on this face plate or table we mount a movable or rotating circular, octagonal, hexagonal, or other suitably formed plate or travelling table of any required thickness fitting close to the under one and moving round its centre, or made to travel from side to side, or to move in a vertical or horizontal direction.

Around the outer circumference of this plate we form the various die holes of any device required to be pressed. This plate or table, or travelling plate or table, as the case may be, is moved from one die to the other by a projecting stud from the main driving wheel, and is so arranged by the action of a lever as to move it into exactly a right position for the die, whatever be the distance required to move.

Above the last named plate, and attached to the framework, is the die frame corresponding to the die hole in the plate or table, and this frame or die piece is actuated by a cam of peculiar shape, so that for a quarter of its revolution it ceases to give any motion to the die at the top and bottom of its stroke, so that the tobacco may be under pressure for a certain time at the bottom of its stroke, and so as to allow time for the movement of the plate or travelling table at the top of its stroke.

Attached to the die frame is a projection of metal carrying a standard for the purpose of thrusting the tobacco out of one die while it undergoes pressing in the next or last one filled.

[Printed, 8*d*. Drawing.]

A.D. 1868, April 29.—N° 1397.

T, WILLIAM.—" Improvements in the manufacture of iron and steel."

'rovisional Specification describes the using a quantity of spongy iron together with the ordinary pig he manufacture of malleable iron; the spongy iron may be obtained from residues of burnt copper rom other oxides of iron.

ed, 4d. No Drawings.]

A.D. 1868, April 29.—N° 1398.

, ALFRED.—(*Provisional protection only.*)—" A new or improved method of or means for preventing oustache from dipping into soup when eating it from a spoon."

'rovisional Specification describes placing a flat bar of ¼ or ⅜ of an inch in breadth on an ordinary poon, and fastening it to the spoon by two clips at either end.

ed, 4d. No Drawings.]

A.D. 1868, April 29.—N° 1399.

HARLES DOUGLAS.—(*A communication from John Howard.*)—" Improvements in machinery for ng and dressing the heads of screw blanks."

ding to this invention, means are employed for causing the spindle, in the jaws of which the screw griped, to be alternately rotated and brought to a state of rest, to comply with the necessary con- nder which such screw blank must be shaved, nicked, and reshaved.

pindle is connected with the shaft driven by the pulley, by means of a spring latch, so that, at the mes, when the two are united, the spindle will turn with the shaft, but when the two are unlatched, lle will be left at rest, the axes of the spindle and shaft being coincident.

the operation of shaving the head of the screw blank is to be performed, the spindle will be revolved; the saw is required to cut the nick, the spindle will be at rest, but will recommence its rotation so he saw is withdrawn, and the cutter approaches to reshave the head, and this will be done while the ulley is revolving continuously.

ed, 10d. Drawing.]

A.D. 1868, April 29.—N° 1400.

, JOSEPH.—" Improvements in the manufacture of fabrics in twist lace machines."

omplete Specification describes modes of forming bands or portions of considerable substance or s in parts of the fabric of twist lace machines.

ed, 1s. Drawings.]

A.D. 1868, April 29.—N° 1401.

JOHN JEX.—" Improvements in machinery, processes, and apparatus to be used in the manufacture ches and other similar articles."

ature of novelty which constitutes this invention is the general arrangement [*and construction*] of *ry or**] apparatus specially applicable for cross-cutting the logs from which the match splints are so for retaining and arranging the splinters when cut, and afterwards heating and dipping them in ing compound.

ed, 1s. Drawing.]

A.D. 1868, April 29.—N° 1402.

N, JOHN, and STENHOUSE, JOHN.—" Improvements in the manufacture or preparation of ials for sizing or dressing yarns and textile fabrics."

nvention consists in the preparation or manufacture of size or of mixtures to be employed for sizing ng yarns and textile materials; and consists in the addition of sulphides to the various preparations d for sizing and dressing yarns and textile fabrics."

ed, 4d. No Drawings.]

A.D. 1868, April 29.—N° 1403.

N, HENRY.—" Improvements in the manufacture of chlorine."

vention consists in heating in a current of hydrochloric acid gas and atmospheric air a mixture of copper and oxide of manganese, or of other similar metallic oxides or compounds having similar tion. In this manner the whole of the hydrochloric acid gas may be decomposed at a moderate ure, say about 400 F., the chlorine of the acid gas is set free and the hydrogen of the acid gas

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ords "and construction" "machinery or," are found in the copy of the Abridgment delivered by the Applicant, but do in the original Abridgment.

combines with atmospheric oxygen as water. The mixture of oxides remain unaltered, and the process becomes continuous. The chlorine thus obtained is mixed with the vapour of water, any hydrochloric acid escaping decomposition or afterwards formed, the nitrogen of the atmospheric air and any of its oxygen left are combined. The water and hydrochloric acid may be separated by condensing and the chlorine absorbed from the remaining gases and utilized in well known manner.

[Printed, 1*s*. Drawing.]

A.D. 1868, April 29.—N° 1404.

SCOTT, Robert.—" Improvements in apparatus for dressing millstones."

The feature of novelty which constitutes this invention is the arrangement of machinery or apparatus whereby the cutting motion is imparted by the revolution of a screw passing through a nut. Great steadiness is thus obtained.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 29.—N° 1405.

JOHNSON, John Henry.—(*A communication from Charles Edward Richardson and George Thatcher Waterman.*)—" Improvements in preserving meat and other animal matters."

This invention consists in curing and preserving meat and other animal substances by completely freezing the meat and subsequently thawing it whilst immersed in brine or other antiseptic solutions.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 29.—N° 1406.

HEATHFIELD, Richard.—(*A communication from Cyrus Dexter Hunt.*)—" Improvements in machinery " for the manufacture of cut nails."

This invention consists of mechanism for feeding and turning over the nail plate or strip, constructed as follows :—

A hollow cylinder capable of a rotary motion is supported upon a table or support jointed to the frame of the machine. The hollow cylinder carries at its front end a pair of guides, through which the nail plate passes to the cutters.

A reciprocating motion about the joint upon which the cylinder table is supported is given to the said table by a rod and crank, and an alternating rotary motion through half a circle is also given to the hollow cylinder by a toothed wheel gearing with teeth on the said cylinder, the motion being transmitted to the toothed wheel through a rocking shaft and toothed gearing or bands and pulleys. By the reciprocating rotary motion of the hollow cylinder the nail plate is turned over at the required times. The rod of the nail plate tongs is supported in a forked support and passes between two disks pressed together by springs. On the outer side of each disk is a ratchet wheel, with which a spring pall engages, the bearings of the disks and palls being fixed to and partaken of the motion of the cylinder table. On the retiring of the cylinder the palls slide over the ratchet wheels and the nail plate is carried back, but on the advance of the cylinder palls engage with the ratchet wheels and cause the disks to advance the nail plate.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 29.—N° 1407.

HOMFRAY, Alfred.—" Improvements in the manufacture of iron or steel shackles, swivels, hooks, slips, " and other kinds of iron or steel fastenings welded into an eye shape, and in machinery to be used in the " said manufacture, which improvements are also applicable to the manufacture of the tyres of wheels."

In manufacturing shackles according to this invention a bar of iron or steel of the required length is heated and flattened on one side at the end. The bar flat side upwards is placed in an anvil block of the figure of half a shackle eye. The metal is forced into the die by the descent of a mandril; a portion of the bar to form the upper half of the eye projecting; the other being bent nearly into shape is raised to a welding heat, replaced on the mandril with another piece of metal between the parts to be joined to make a sound joint, and welded and brought into shape. The eye is countersunk and flattened by means of a bolt driven in by a steam hammer. An eye being similarly made at the other end of the bar; it is bent into shape by fixing its two eyes or pins in the machine hereinafter described, and causing a mandril to descend on the middle of the bar and bend it into the required shape.

The machinery consists of a steam hammer, in the block of which there are two levers and two reverse levers. The ram on descending strikes the latter and closes the former. In the face of the ram is a projecting mandril so placed that when the ram rests on the bottom of a groove in the anvil the mandril is between the levers. The steam hammer also carries a welding hammer; the ram first descends and afterwards the welding hammer. The levers are held in their places during the action of the welding hammer by means of two clips which hold them while the welding hammer strikes upon and welds the heated metal. The method of manufacture and machinery described are applicable, with unessential modifications, to the manufacture of other kinds of fastenings and the tyres of wheels.

[Printed, 10*d.* Drawing.]

A.D. 1868, April 30.—N° 1408.

WISE, Francis, and FIELD, Edward.—(*Provisional protection only.*)—" Improvements in apparatus for " effecting the separation or removal of foreign matters or impurities from water."

Water is submitted to the action of substances which by admixture therewith have the effect of throwing down, separating or removing foreign matters or impurities, preferring caustic baryta when treating water impregnated with earthy matters, for which purpose vessels are employed containing series of cells, chambers, or passages, the upper parts or portions of which communicate with each other at their respective ends alternately, so that the water under treatment in passing from the inlet to the exit openings of the apparatus is compelled to traverse each of the entire series of horizontal cells, chambers, or passages, while traversing which it will be subjected to the constant action of the caustic baryta or other substance or substances mixed with it, and whereby the foreign matters or impurities thereby affected will be thrown down and deposited in the lower parts or portions of the horizontal cells, chambers, or passages below the point or points at which they communicate with each other.

By preference the water and caustic baryta or other substance or substances are fed to the apparatus simultaneously, means being provided for agitating and mixing them in their passage to the cells, chambers, or passages.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 30.—N° 1409.

GOUGH, John.—" Improved geering for actuating the knife in paper-cutting machines."

The feature of novelty which constitutes this invention is the application of the crank to give motion to the frame which carries the knife in the class of paper cutting machines indicated.

[Printed, 8*d.* Drawing.]

A.D. 1868, April 30.—N° 1410.

FERRIE, William.—" Improvements in blast furnaces."

The invention consists in constructing or placing the dam immediately below the tymp, and with its inner face flush or nearly flush with that of the tymp, instead of placing it about two and a half feet out from the tymp, as ordinarily practised. A space is left between the top of the improved dam and the tymp, such as to admit of the ordinary clay stopping being attached to the tymp, which can be easily removed and the furnace can be worked in the usual way if required. In connection with this improved arrangement it is preferred to introduce a tuyere above the tymp at a level somewhat higher than that of the tuyere on the opposite side.

[Printed, 10*d.* Drawing.]

A.D. 1868, April 30.—N° 1411.

DENDY, John, and BEARD, John Russell.—" Improvements in woven fabrics."

The silk noils which are usually wasted are reduced to a state of yarn by teasing or otherwise preparing and then dyed any desired color or colors so that it may be woven any pattern or design.

[Printed, 4*d.* No Drawings.]

A.D. 1868, April 30.—N° 1412.

BETTELEY, Joseph.—" Improvements in ship-building, and in fastening bolts and sheet metal to be used " therefor and for other purposes."

This Provisional Specification describes a variety of improvements in shipbuilding, amongst others the forming an iron tube or semi-tube on the under side of a ship to stiffen it and increase its buoyancy; also the making the iron frame of a ship of trough iron or other section shewn; it also describes various improvements in ships' fastenings, amongst others the making the heads of the bolts to fit in the troughs or sections of the iron used for the ribs and knees; also the making white metal bolts with iron or steel cores; it also describes a sheet metal for sheathing, composed of zinc and tin with an admixture of lead and antimony.

[Printed, 1*s.* 8*d.* Drawings.]

A.D. 1868, April 30.—N° 1413.

WARD, Robert.—(*Provisional protection only.*)—" Improvements in machinery for spinning or twisting " tobacco and otherwise preparing it for sale."

This Provisional Specification describes running the tobacco on to the reel in the roll form as required for sale in place of the present method of running the tobacco on to the reel to be afterwards taken off and formed into rolls. For this purpose such an arrangement of the ends and spindle of the reel and of the other parts of the machine is employed as will permit of the roll being taken from the machine without its being necessary to resort to the second process of rolling as now required. The Specification also describes modes of oiling tobacco, also modes of arranging the spinning machines, so that they may be under the more immediate control of the spinner.

[Printed, 4*d*. Woodcut.]

A.D. 1868, April 30.—N° 1414.

CASSELL, John Henry.—(*Provisional protection only.*)—" Improvements in sheathing iron ships."

This Provisional Specification describes sheathing iron ships with cork.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 30.—N° 1415.

CHATWOOD, Samuel.—" Improvements in the construction of safes."

This Provisional Specification describes various improvements in the construction of safes, amongst others the constructing iron safes by bending the iron plates to form the corners or by welding the plates together at the corners so as to avoid a joint or seam. It also describes the use of a flange or T iron to cover the seam or joint which exists in safes as usually constructed between the door frame and the side of the safe, and also between the double doors of a safe. It also describes making a well safe, the outer case being a solid mastive casting, and the inner one lifted by admitting fluid under it.

[Printed, 3*s*. 6*d*. Drawings.]

A.D. 1868, April 30.—N° 1416.

PARR, Samuel, and STRONG, Alfred.—" An improved mode of combining certain materials in the " construction of walls and the roofs and floors of houses and other buildings."

Thes improvements consist in combining tubes or half round tubes of metal, earthenware, or plastic clay, or tubes of an hexagonal or other geometrical sectional form with concrete and cement, the said tubes to be filled either entirely or partially with other materials, and arranged and disposed in various ways, and in some cases combined with metallic bands, rods, and dowels of various materials so as to form walls and the roofs and floors of houses and other buildings.

[Printed, 10*d*. Drawing.]

A.D. 1868, April 30.—N° 1417.

GOUNDRY, John Wesley.—(*Provisional protection only.*)—" Improvements in the means of carrying " railway and other tickets, cards, and labels ready for exhibition or delivery."

This invention consists in a case or frame for the ticket which has an elastic band or other appliance for attaching the same to the person or to the personal attire.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 30.—N° 1418.

WEATHERDON, Baldwin Fulford.—(*A communication from Edouard Cormier.*)—" A new or " improved mode of soldering tin boxes, canisters, or cases."

This invention consists in soldering tin boxes, canisters, or cases by the heat of the flame of coal gas in combination with jets of air or oxygen acting on strips of solder placed upon the seams or parts to be joined, a revolving platform or stand for facilitating the said process being employed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, April 30.—N° 1419.

MENNONS, Marc Antoine François.—(*A communication from Henry Cook.*)—(*Provisional protection only.*)—" An improvement in planing, polishing, turning, and other machine tools or apparatus of like " description."

This invention consists in the application to planing, polishing, turning, and other analogous machinery or apparatus of a screw provided with two threads of equal pitch, but running in opposite directions,

ıg, as the case may be, either the tool or the work, which is thus enabled to travel uninterruptedly
without reversal of the motion of the screw.

4d. No Drawings.]

A.D. 1868, April 30.—N° 1420.

ILLIAM ROBERT.—(*A communication from Charles Jenkins Harris and Edwin Holmes Bugbee.*)—
nents in machinery for spinning fibrous materials."
oose of this invention is to produce a machine for spinning fibrous material which will possess all
ıges of the flyer frame in manufacturing fine yarns of high numbers together with all the capacity
on which distinguishes the "ring spinning frame." The flyer is cylindrical in form, and surrounds
which is placed on what is technically termed a "dead spindle." The flyer *does not change* its
th reference to the bobbin on the spindle in winding the thread during the spinning operation,
verse rail which operates the device for winding the bobbin is connected *not with the flyer*, but
n which is made to traverse the bobbin independently of the flyer. This traverse arm is affixed
se block which is attached by suitable guides to the traverse rail so as to whirl around with the
ircular path in the rail, a short arm projecting from such traverse block entering into a longitudinal
flyer which extends the whole length of the bobbin. As the traverse rail is moved up and down
se arm will be moved also, and will lay the yarn in the bobbin in the proper way, a longitudinal
eing made in the side of the cylindrical flyer through which the hooked end of the traverse arm
to the bobbin. Upon the top edge of the flyer a wire arm having an eye at its extremity is
The centre of the eye is coincident with the axis of the flyer produced. It is hinged to the flyer
being permanently attached thereto for convenience in doffing the bobbin, the arm being capable
oved out of interference by means of the hinge. The roving is conducted to the flyer through the
flyer arm, and will necessarily occupy while it is being twisted a dead line, or a line that is subject
tion. With this machine yarn can be spun of the highest numbers and a speed of seven thousand
ninute to the flyer.

8d. Drawing.]

A.D. 1868, April 30.—N° 1421.

THOMAS.—"Improvements in boilers, and in apparatus for effecting the consumption of smoke
ırnaces of boilers."

rst place my improvements consist in welding the cross tubes into the flues of boilers instead of
em as heretofore. In doing this I use an anvil shaped so as to extend about half way round the
o fit up into the corner formed by the tube and the flue.

ond part of my improvements consists of an improved apparatus for burning the smoke. I divide
to two chambers by means of a fire brick partition, which may have a number of holes in it com-
with other holes leading from the ash space under the grate bars.

door is made in two halves to correspond to these two chambers. A swing door is placed at the
furnace, and is turned by means of mechanism, when either fire door is opened, so as to close the
ling chamber.

doors can be shut without moving the swing door.

on of the apparatus is as follows:—The man opens one of the doors, thus closing the corresponding
y the swing door. He then throws in the coal and closes the door. The chamber being closed
produced must either return and pass round in front of the partition or pass through the holes in
on, thus getting mixed with air. It has then to pass over the incandescent fuel in the other
here it is consumed.

of being of fire brick the partition may be a water space.

10d. Drawing.]

A.D. 1868, April 30.—N° 1422.

N, JOHN HENRY.—(*A communication from François Coignet.*)—" Improvements in the manufac-
gelatine."

posed according to this invention to substitute for the muriatic acid, sulphurous acid which has
ty of dissolving effectually the calcareous salts or saline particles of the bones.

4d. No Drawings.]

A.D. 1868, May 1.—N° 1423.

JOSEPH.—" Improvements in apparatus for regulating, measuring, and registering the flow of

The apparatus consists, in the first place, in the combination of a number of separate measuring chambers (of the requisite capacities), each in communication with a common supply pipe and a common outlet, but having a separate registering apparatus, and worked by its respective handle so as to draw off its contents and register the quantity drawn; then after the drawing off to reopen the communication of the chamber with the supply pipe in order to refill it.

And, secondly, in substitution for the several measuring chambers there is one main chamber capable of measuring the largest quantity required to be drawn off, the smaller quantities being taken off through outlets at the proper levels by working the appropriate handles, the quantity drawn off being supplied again to the chamber by putting back such handles. The indicating dials are mounted one over another so as to be each in sight from the top.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 1.—N° 1424.

ABEL, Charles Denton.—(*A communication from Benoit Bloch.*)—"The production of a new or improved "colouring matter from aniline."

This invention consists in the production of a grey colouring matter from aniline by mixing together two pounds of aniline and ten pounds of liquid arsenic acid, which is heated to boiling point until the compound thickens and rises, after which the resulting thick blackish substance is purified by mixing therewith about eighteen quarts of water and two pounds of muriatic acid. This is boiled for about half an hour and is filtered, the colouring matter remaining in the filter. This is washed first in boiling water and then in a solution of carbonate of soda, and is then dried, producing a black powder. For dying with this substance it is dissolved in alcohol containing about ten per cent. of sulphuric acid; the solution is filtered and is then fit for dying, producing fine grey tints. Wools and silks to be dyed therewith should be first steeped in water acidulated with sulphuric acid.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 1.—N° 1425.

LEHEUP, Edward.—(*Provisional protection only.*)—"Improvements in the manufacture of wooden "boxes."

The object of this invention is to fasten together fish boxes and similar receptacles in a more durable manner than heretofore.

For this purpose in one arrangement wooden screws are used in lieu of metal screws or nails; in another a metal pin with an eye at one end is used; when this pin is in position a short pin is passed through the eye and the wood of the box. Or T or L shaped metal pins or a straight metal pin may be used, the shanks of which when passed through the wood are clenched or rivetted. Or a dowel is driven into the wood and a short pin is passed through the wood and the dowel at right angles thereto and at one or both ends of the same.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 1.—N° 1426.

MUNRO, Archibald.—"Improvements in machinery, tools, and tool holders to be used for cutting stone, "slate, marble, and other materials."

The feature of novelty which constitutes this invention is the general arrangement of machinery or apparatus used for dressing stone, whereby a steadier and smoother motion is obtained for cutting operations than has hitherto been possible. Also an improved mode of constructing the holders of cutting tools whereby the tools are more easily and at the same time more firmly fixed than at present.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, May 1.—N° 1427.

CHILDS, Augustus Bryant.—"An improved apparatus or machine for separating mixed, powdered, or "other substances."

The substance known as non-explosive gunpowder, which is gunpowder mixed with a certain quantity of some incombustible powdered substance, cannot be used until the particles of this incombustible or non-explosive substance are removed or separated from the particles of gunpowder; and the chief object of my invention is to afford the means for effecting this separation or removal in a more perfect and expeditious manner than has heretofore been found practicable. The nature of the said invention consists in subjecting the mixed materials to the combined action of a wire cylinder and screw conveyor, so as to effectually and expeditiously separate the particles of gunpowder from the material with which it is mixed.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 1.—N° 1428.

WARNE, John.—" A new or improved union, junction, or fastening for pipes and tubes."

This invention consists in attaching to or forming in a piece with one end of a tube one or more projecting studs, two for example, and in forming in the nut which is loose on the end of the other tube corresponding recesses cut in a flanged face formed on the nut. On passing the studs through the recesses and turning the nut, which for the sake of convenience is fitted with arms or handles, the studs are held in the recesses and the fastening is secure. On bringing the recesses in the nut again opposite the studs the tube can be released.

This union joint is particularly applicable for connecting tubes to butt or cask taps.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 1.—N° 1429.

EVERITT, William Edward.—" Improvements in the manufacture of copper, brass, and metal tubes."

This invention refers to the rolling out of solid tubes in a heated state upon a plug and rod between grooved rollers to any desired length, such solid tubes either being formed by boring, drilling, or punching a hole through a solid rod, ingot, or lump, or by casting a thick solid tube. The tubes are further produced upon a draw bench.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 1.—N° 1430.

MARLIN, Paul, and TACK, Auguste.—" An improved process for transforming hydrocarbon oils into " gas for illuminating and heating purposes."

Mixing steam with the hydro-carbons before introducing them into the retorts, and thereby facilitating the process of distillation and the escape of the vapors.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 1.—N° 1431.

JOHNSON, John Henry. — (*A communication from Amédée François Legrand, Ferdinand Martinot, Benjamin Martinot, Auguste Holma, and Jean Baptiste Génet.*)—" Improvements in machinery or apparatus " for burling and shearing textile fabrics."

This invention consists in rendering adjustable, by the aid of wedges or otherwise, the bars or holders which carry the channelled and serrated reciprocating blades employed in burling and shearing fabrics whereby the distance between the contiguous cutting edges of each pair of blades may be varied to suit the fabric under treatment.

Also, in the employment of two pairs or sets of channelled and serrated reciprocating blades, with guide rollers and adjustable tension bars for the purpose of burling or shearing both faces of the goods simultaneously in one machine.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 2.—N° 1432.

HEATON, John.—" Improvements in reverberatory and other furnaces."

Under one roof, arch, or fire place are combined a combustion chamber, a chamber for, say, coke and limestone, and the body of the furnace or chamber for the metal to be operated upon.

The fire place is separated from the combustion chamber by a bridge, and the combustion chamber from the, say, coke and limestone chamber by a perforated bridge. The roof or upper part of the arch is somewhat depressed over the body of the furnace.

The heat from the fire, after traversing over these several compartments, passes away to a flue or stack. Air passages, capable of being closed or regulated, open through the floor of the combustion chamber, and like adjustable air passages open into the upper part of the combustion chamber.

The ash hole under the coke and limestone chamber may be closed by doors.

High heat with consumption of smoke are attained.

By using the coke and limestone chamber as a gas generator the furnace is applicable to various purposes in ironworks, and the arrangements may be applied to other furnaces for the consumption of smoke or generating of great heat.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, May 2.—N° 1433.

BARNETT, FREDERIC.—"An improved unspillable pail or vase."

The novelty consists in the construction of a pail or vase that will receive liquids while in its n position, but in the event of being upset, closes itself hermetically by its own unaided action.

[Printed, 10*d*. Drawings.]

A.D. 1868, May 2.—N° 1434.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Jean Joseph Barretto and Antoine Jo Baretto.*)—" New or improved apparatus for measuring and registering the flow of liquids."

This invention relates to an apparatus for measuring and registering with accuracy the flow of liquid other words, the quantity of liquids *in transitu* from one place to another.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 2.—N° 1435.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Edouard Maître.*)—(*Provisional protectio* —" Improvements in apparatus for propelling vessels."

This invention relates to the propelling of vessels by means of a cylindrical capacity into which the is driven by a lift and force pump.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 2.—N° 1436.

HAWKES, THOMAS, SPENCER, FREDERICK WILLIAM, SPENCER, GEORGE, and STEN JOSEPH.—(*Provisional protection only.*)—"An improved seed and manure drill, parts of which inve " are also applicable to other similar agricultural implements."

In our improved manure box holes are formed in different places in the bottom of the box, or on e side, one or more holes being over one or more of the tubes which convey the manure to the ground. lower part of the manure box being made of wood, iron, or any other suitable material, the shape co sponding to the cylinders or stirrers. In the box we place suitably formed stirrers, consisting of cylind of any required length or diameter, having projections of any desired number, size, or shape which revo on an axis and so act as to move the manure in the bottom of the box, stirring no more than is actu necessary.

The arrangement of the machinery for sewing the seed is as follows :—

A box, or any number of boxes, is or are placed on the frame or fixed separately to the manure box, or any other convenient manner; in this box or boxes revolve one or more cylinders constructed of wood, ir india-rubber, or any other suitable material, having on the face of them projections of any required size length to bring the seed towards openings provided in these aforesaid boxes, the quantities sown bei regulated by a slide or slides. The cylinder or cylinders of the box or boxes receive their motion from th driving wheels or from the end of the spindles of the manure cylinders.

This invention is also applicable to the drills or implements used for sowing corn, grain, and pulse.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 2.—N° 1437.

CAMP, EDWIN GILLARD.—(*Provisional protection only.*)—" Improvements in mallets used in playing th " game of croquet and in similar games."

This invention consists of covering one or both ends of mallets used in the game of " croquet " an similar games with caps made of caoutchouc or vulcanized india rubber, or of other materials more or les elastic, and having for its object the rendering of such mallets more durable and preserving the balls used i the game and the distinctive colors on them, and also lessening the risk of fracture to the handles of th mallets themselves, and obviating the jar felt in the arm of the player when a ball is struck hard, and fo striking and driving balls with greater precision and with a greater range of percussive force.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 2.—N° 1438.

BINNS, LEEDHAM.—(*Provisional protection only.*)—" Improvements in looms for weaving."

The novelty consists in,—

The application of a shield or guard of tin or other metal or material placed on the picker spindle or oth convenient position of the going part or lay of a loom betwixt the picker and the edge of the fabric or the warp thereof to prevent grease spots being produced thereon.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 2.—N° 1439.

SCOTT, Henry Young Darracott.—" Improvements in kilns for burning lime and cement."

Long fireplaces provided with lateral openings are formed at the side of the firing chamber and are supplied with air through pipes or conduits imbedded in the brickwork. Water pipes are also imbedded in the water, and being heated by the incandescent mass in the kiln, steam will be generated and allowed to escape into the mass of lime or cement.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 2.—N° 1440.

MAISTRE, Jules.—" An improved process for dyeing wool."

The wool in its greasy state is divided into pieces. Indigo is placed to digest in pure or acidulated water and afterwards reduced to a fine paste, and then added to a solution of carbonate of soda or other soluble alkali. The mass is then warmed to about 95 to 120 degrees Fahrenheit, when the wool is thrown into or drawn through the solution. After some hours the liquid is run off and the wool removed, subjected to pressure, and when sufficiently pressed exposed to the air. The solution is then returned to the vessel and the wool again thrown in. 12 hours afterwards the operation is recommenced and repeated 2 or 3 times daily until the wool has attained the desired shade; it is then washed. A color derived from the distillation of coal may be substituted for the indigo.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 2.—N° 1441.

SMITH, Augustus.—" Improvements in apparatus to be used in connection with furnaces for burning " creosote and other combustible liquids."

The creosote is driven into the front of the furnace by a steam jet which divides it into spray. The important feature is that the steam jet issues in the middle of the stream of the liquid before the liquid reaches the end or outlet of its pipe.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 2.—N° 1442.

BOYCE, James Edward, and HARRINGTON, Robert. — " Improvements in umbrellas and " parasols."

This invention consists of improvements on an invention patented by the same inventors on the 17th June 1867, No. 1766.

The patentees apply to the runner of an umbrella or parasol two levers, the inner ends of which are pressed through slots in the runner on to the stick. These hooked ends of the levers engage in slots across projections fixed on the stick and fix the runner in its open or closed position. To open or close the umbrella or parasol the outer ends of one or other of the levers is pressed. An additional lever may be placed over the levers described, by pressing one or other end of which additional lever one or other of the first described levers may be acted upon.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 2.—N° 1443.

JOHNSON, John Henry.—(*A communication from the Incorporated Company " Langlois and Company".*) —" Improvements in apparatus for exhibiting minute photographic pictures, and in pictures or slides to be " used therewith."

This invention consists of an apparatus for viewing microscopic photographic pictures. According to one arrangement, which has the effect of imparting apparent animation to the pictures, two or more lenses, having each a suitable picture attached to it, are moved rapidly to and fro before an eye piece or spy hole in a case or holder so as to present alternately or successively and at minute intervals of time the different pictures to the eye, thus producing the effect of motion in the subject represented. According to another form of apparatus a single stationary Stanhope lens is employed, and the microscopic pictures are applied to a slide or strip of glass which is passed under the lens in suitable guides.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 2.—N° 1444.

LAKE, William Robert.—(*A communication from John Tatem Rich.*)—"An improved mode of and "apparatus for generating gas and mixing the same with atmospheric air for heating and illuminating "purposes."

The gas generated is first forced into the retort through a stand pipe by means of a jet of steam, the gas being in its passage mingled with atmospheric air drawn into the stand pipe. The gas-steam, and air commingled pass into the hydraulic main in which the steam is condensed, leaving the gas and atmospheric air thoroughly intermingled. I prefer to use an ordinary retort stand pipe and hydraulic main, having a stop cock to admit the air which is there mingled with the gas, and then drawn through a funnel shaped case and forced into the main. I use a furnace wherein gases evolved from coal or other substances are mingled with atmospheric air before entering the fire box. The fuel is exposed to heat in a retort or chamber, and the gaseous products passes therefrom to the fire box. Steam may be also mingled with the gas and air before they pass into the fire box. I place a perforated diaphragm of some refracting substance across the grate surface for the gasses to pass through. The heat from the fuel on the grate below the retort is directed thereon, the heat being also reflected from the diaphragm. Or the heat may be only reflected upon the retort from the diaphragm. A steam blower is provided with a series of concentric funnels to bring the steam into contact with numerous currents of air.

[Printed, 1*s*. Drawings.]

A.D. 1868, May 2.—N° 1445.

BUDDEN, John Leggett.—(*A communication from Woodford Pilkington.*)—(*Provisional protection only.*) —"Improvements in machinery or apparatus for drying wool or for discharging moisture from fibrous, "granular, or other materials."

This invention has for its object improvements in machinery or apparatus for drying wool or for discharging moisture from fibrous granular or other materials by centrifugal action thereon whilst rotating within a drum of conical form arranged to rotate in a horizontal or nearly horizontal position, whereby a self feeding and self discharging drying apparatus is obtained.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 2.—N° 1446.

LAKE, William Robert.—(*A communication from David Lyman.*)—"Improvements in buckets and "other vessels of wood of analogous form, and in means for producing the same."

The said invention consists in the production of buckets and other wooden vessels of analogous form by cutting a helical shaving of a proper thickness from a log or mass of wood and springing it afterwards into the desired regular and conical form and confining it there, the several lengths of shavings being properly divided each from the other by machinery or otherwise, and each provided with a suitable bottom and with ventilating openings if such adjuncts are required. The log of wood is first thoroughly steamed; it is then turned in cylindrical form. A thin and very sharp knife is moved along from one end of the log towards the other while the log slowly revolves. The shaving is divided into proper lengths by a wheel having a sharp cutter travelling upon the surface of the log in advance of the main cutter, and at every revolution impressing a deep cut in the wood. The apertures are produced by similar means. A small piece of tinned iron or other suitable material is applied at the junction at the upper edge, and the bottom is suitably confined by the same or by other means.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 2.—N° 1447.

LAKE, William Robert.—(*A communication from Charles Neer.*)—"Improvements in dynamometers."

The nature of my invention consists chiefly in the combination of a peripheral power scale with a steelyard or other measure of actual force, whereby the power exerted can be measured with accuracy and the nominal horse power be determined by inspection and a calculation based upon the number of revolutions. The steel yard carrier is formed in two parts, so that the dynamometer may be attached to a shaft without removing the same from its bearings. The peripheral power scale is made in two parts which are connected to the shaft coupling by means of a ring, columns, and set screws, so that they can be arranged around the shaft without taking the same down. A power indicater is combined with the steel yard head and with a dial, whereon is indicated the proportion of speed, the actual power consumed being thereby determined. A friction tester is used, which consists of a cylinder fitted to turn within two boxes, which are adjusted upon the cylinder by means of screws, one of the said screws being carried by a weighted lever.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 4.—N° 1448.

, Howard.—(*Provisional protection only.*)—“Improvements in means for retaining corks or toppers in bottles.”

ject of the invention is to provide for the secure holding of corks or other stoppers in bottles, so as t their being forced out by internal pressure and yet to admit of repeated use of the same corks or ppers, and of the means used for securing them in the bottles.

, by preference of metal, is fixed round the neck of the bottle, and to this is jointed another band assing over the cork or other stopper to hold it in the neck. This band may have a projection it to assist in moving it on and off the cork as required.

d, 4*d.* No Drawings.]

A.D. 1868, May 4.—N° 1449.

William Edward.—(*A communication from Artus Claude Loddé, junior.*)—“An improved of applying a coating of silver upon any animal, vegetable, or mineral substance.”

nproved process consists in passing the article to be operated upon firstly into a bath of sulphuret slightly phosphorated, then into a solution of nitrate of silver, and finally in reducing the silver osited by placing the article in a current of hydrogen gas.

ed, 4*d.* No Drawings.]

A.D. 1868, May 4.—N° 1450.

S, Albert.—(*A communication from William Mullins.*)—(*Provisional protection only.*)—“An ed mode of locking the nuts of screw bolts.”

t is secured by a pin driven in a groove under the nut and bent up against the side of the same.

d, 4*d.* No Drawings.]

A.D. 1868, May 4.—N° 1451.

I, Ignace.—“Improved apparatus for warehousing petroleum, mineral, or essential oils, and other .”

sin of suitable dimensions a number of superposed and consecutive inclined planes are arranged. being filled with water, the casks containing the liquid to be stored are pushed down a well at one e basin so as to enter below the lowest inclined plane. Owing to the difference in density between l in the casks and the water, the casks travel in a zigzag manner under the consecutive inclined d round the ends of the same until they reach an outlet at the top, where they are stopped by a y removing the catch the casks can readily be taken out.

d, 8*d.* Drawing.]

A.D. 1868, May 4.—N° 1452.

, Christopher Penrhyn.—(*Provisional protection only.*)—“Improvements in chimney tops or

ey pots from which the smoke does not escape by the top are fitted with a hinged cover for the top, or otherwise, to allow passage for the sweep's brush.

ed, 4*d.* No Drawings.]

A.D. 1868, May 4.—N° 1453.

IEIM, Jonas, and HIRSCHHORN, Louis.—(*A communication from Henry Geissel.*)—(*Provisional n only.*)—“Improvements in lockets.”

ont ornament of the locket consists of a brooch which can be taken out and used as an ordinary

ed, 4*d.* No Drawings.]

A.D. 1868, May 4.—N° 1454.

RTON, Thomas, and PEMBERTON, George Arthur.—“Improvements in alarm bells, call and other bells.”

ding to this invention the hammer or clapper of the bell turns on a centre at one end of it, and is ainst the bell by the action of a lever, the short arm of which is pulled down by the ordinary wire. or weighted end of the clapper bears against a peg or stud on the long arm of the lever, and the per is forced against the bell by the action of the said peg or stud upon it. On loosing the wire of the bell the clapper descends by its own weight, and by bearing upon the peg or stud of the lever depresses the said lever and restores the parts to their original position. By this invention springs are rendered unnecessary.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 4.—N° 1455.

MORGAN, Edward, and MORGAN, George Henry.—" Improvements in carriages."

The invention relates to a novel combination and arrangement of parts of the heads of carriages having folding heads applied thereto, and to means or apparatus for operating such parts. For this purpose the slats and intermediate hoop sticks ordinarily employed are dispensed with, and only those hoop sticks are employed which are situated at the angles of the carriage head, as described in the Specification of Letters Patent, dated March 6, 1867, N° 622.

The front light is also formed in a somewhat similar manner to that described in the before mentioned Specification; but a framing constructed and operated in the following manner is employed to facilitate the use of that description of side lights which when not in use are received into recesses formed for them in the carriage doors. The top framing over such side lights is formed in three parts, one of which is rigid with the " door head pillar," but is hinged at the top to the second part of such top framing. This second part is hinged at a short distance from the joint and a little below the top thereof to the third part, which is hinged to the top half of the front light, and motion is given to such parts to raise and lower them by means of bell crank levers operated by a screw, as described in the Specification of Letters Patent, dated January 28th, 1862, N° 223. And such bell crank levers are by links connected to levers mounted upon centres of motion attached to the "standing pillars," such last mentioned levers being by links and pin joints connected at one part to levers fixed on the joints or axes of motion of the "door head pillars," and at another part are by links connected to the bottom part of the " front light pillars."

Thus, when the side lights are dropped into their recesses in the doors, and the bell crank levers are caused to turn on their axes of motion, the parts of the front light are folded so as to stand in a position at or nearly at right angles to each other, and the top framing of the carriage head is also at the same time folded so as to stand at about the same angles and lie within the parts of the front light whilst the "head pillars" are turned down so as to lie in or nearly in a horizontal position.

In order to facilitate the action of the parts when the head of a carriage is being lowered, a cord or band is connected at one end to the front part of the top framing, and after passing round a stud, pin, or pulley, or through an eye on one part of the "front light pillar," is connected to the "elbow" or to other suitable part of the carriage.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 4.—N° 1456.

MARSHALL, William.—" Improvements in machinery or apparatus employed in the clipping of lace and " other fabrics."

Several sets, each consisting of two, three, or more blades, are used, each blade capable of separate adjustment. A centre blade has a stem perforated to receive screws locked by nuts and held in a frame formed with a handle and with slots traversed by a horizontal rod passing through holes in the stems of the side blades which work on axles and guide pins. The horizontal rods are pressed by springs and furnished with links adjustable in levers on a rocking axle with a stop piece, and also with a thumb piece to depress the outer blades. The rods may be screw threaded and carry nuts.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 4.—N° 1457.

ESTOR, William, and TERRERO, Maximo. — " Improvements in the means of and apparatus for " preserving animal and vegetable substances."

According to this invention the substances to be preserved are subjected to one or other number of treatments with sulphurous acid gas and chlorine generated in any convenient manner. The substances may be enclosed in a receptacle in which the gases are introduced or generated, and the effect will be to destroy the tendency of the air to cause decomposition, and also to prevent the possibility of existence of animalculæ, the chlorine being destructive of all animal life. It is essential that the two gases should be applied at the same time.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 5.—N° 1458.

WRIGHT, David Pitcairn. — (*Provisional protection only.*) — " Improvements in the method of and " means or apparatus for pouring, drawing off, measuring, and regulating the flow of liquids."

ty of this invention consists in forming with or connecting to the vessel holding the liquid to
drawn off a combination delivery pipe and plug, an airway being formed with the said delivery
permits the liquid to flow into the receiver until it reaches the airway of the delivery spout or
will cut off the supply of air and consequently the flow of the liquid.
wing off liquids from large vessels I sometimes apply a suitable shaped measure at the bottom
ination delivery pipe, by which I am enabled to exactly measure the quantity drawn off.
d. No Drawings.]

A.D. 1868, May 5.—N° 1459.

David Pitcairn.—" Improvements in the manufacture of certain descriptions of taps."
lty of this invention consists in constructing the main barrel and shank of taps of iron, and
or otherwise protecting the same from oxidation, using a cork or other equivalent barrel or
g, thereby rendering the grinding or fitting in of the plug unnecessary, and greatly economizing
creased strength and durability.
d. No Drawings.]

A.D. 1868, May 5.—N° 1460.

William. — (*Provisional protection only.*) — " Improvements in the construction of iron and
s and other floating bodies, and in the mode of attaching or connecting and fixing wood planks
es and bottoms thereof to receive the metal sheathing and other external and also internal
iron and steel ships and other floating bodies."
t and intention of this invention is to dispense with the necessity for making holes in the
on or steel ships, or using bolts, nuts, washers, and filling pieces for securing wood planking to
d bottoms; thus the inside of the ship is left perfectly flush and smooth to receive the frames,
tercostal keelson, and other tie plates that are to be fayed thereto, thereby avoiding the expense
and upsetting the said stringers, intercostal keelson, and other tie plates as at present practised
ruction of iron and steel ships, the whole of the rivetting by these improvements being effected
side of the vessel and made flush, the heads of the rivets being on the outside. I propose to
of a ribbed dovetail shape, or of a double T shape in cross section. I use the aforesaid straps
tudinally or vertically, and fit them on to the outside of the vessel, and rivet them by preference
of the vessel, and by fitting the ends of the planking to the sides of the dovetail or double
d fitting and fixing the planks by their ends between each pair of one or the other of such said
lanks will thus be securely held and connected to the sides and bottoms of ships and other
ies without the aid of fastenings passed through the bottom and sides of the ship.
d. No Drawings.]

A.D. 1868, May 5.—N° 1461.

EY, William.—(*Provisional protection only.*)—" Improvements in machinery for wood cutting,
nd mortising."
ntion relates to improvements in machinery for wood cutting, joinery, and mortising, and more
to those machines now in use and known as " Sketchley's universal joiner," and it may also be
ordinary circular saw tables, for the raising and lowering the said tables, or for raising and
e spindle, or for moving the fence in a perfectly parallel line horizontally, and likewise for raising
g the boring apparatus attached to the said tables.
nvention great simplicity and accuracy is attained and less power required for lifting.
d. No Drawings.]

A.D. 1868, May 5.—N° 1462.

, **Charles William.**—(*Provisional protection only.*)—" Improvements in the manufacture of
, and in working furnaces in connection therewith."
ntion has reference to the process of making cast steel, described in the Specification to the
former Patent, N° 2395 of 1867; and consists in introducing into the metal bath, just before the
of the melting process, certain ingredients, by preference a compound of litharge and nitrate of
effect the elimination of the sulphur, phosphorus, and silicon, the oxygen of the litharge in
with the carbon and silicon setting free the metallic lead, which in its turn combines with the
ile the soda combines with the silica produced, and, to a certain extent, with the phosphorus,
s appearing as slag on the surface of the molten metal. The bath then receives an admixture
ganese, or it is treated in any other suitable manner.

On introducing the litharge, the communication between the furnace and the regenerators is closed, and a communication is established with a condenser, into which the surplus litharge and alkaline vapours pass.

Other substances, such as stannates, manganates, titanates, &c., may be used, also salts or oxides of soda, potash, or lime may be used in place of the nitrate of soda.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 5.—N° 1463.

ABEL, Charles Denton.—(*A communication from Maximilian Schmid Von Schmidsfelden.*)—"Improvements in axle boxes for the rolling stock of railways."

This invention has reference to axle boxes in which oil is used. An oil reservoir is formed at the bottom of the box, communicating therewith through an opening fitted with a plug through which a flat wick placed between two pieces of felt passes; these are kept in contact with the under part of the axle by [illegible] springs pressing against the under surface of the block. The axle runs in a bearing brass upon a spherically formed seat on which the upper part of the axle box rests. This upper part of the box is [illegible] separate from the box as a cover, being secured by bolts.

The back surface of the box has two circular grooves, into which are fitted two discs of felt fitting closely round the axle.

Access is gained to the axle box and oil reservoir through apertures closed by screw plugs.

The bearing brass is, by preference, lined with an alloy of 80 parts of zinc, 14·5 parts of tin, and [illegible] parts of copper.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 5.—N° 1464.

GERHARD, Frederick William.—(*Provisional protection only.*)—"Improvements in motive-po[illegible] engines actuated by steam or other vapour."

According to this invention the waste steam is conducted by a pipe connected with the eduction pipe [illegible] a waste steam cylinder, by preference larger than the cylinder of the steam engine. To the end of [illegible] waste steam cylinder, opposite to that at which the steam was introduced, another smaller pipe is [illegible] by which the steam is conducted to a boiler of about the same size as the original boiler. Water is [illegible] this boiler, and the steam introduced heats the water and produces steam by which another engine [illegible] worked, and so on. The steam is ultimately utilized by passing from the waste steam cylinder to the [illegible] tank, the water of which is heated by it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 5.—N° 1465.

DAWBER, John.—(*Provisional protection only.*)—"Certain improvements in steam engines."

My improvements consist in so constructing the cylinder or cylinders of steam engines that they may [illegible] a regular reciprocating siding movement in the same parallel or line with the piston and piston rod, but [illegible] reverse action or stroke in contradistinction to fixed or oscillating cylinder.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 5.—N° 1466.

CLOUGH, John.—"Improvements in "screw-gill boxes" for preparing wool and other fibrous substan[illegible]

The novelty consists in,—

Having the screws which work the front set of gills placed outside of and separate from and dri[illegible] independently of the screws which work the back set, and in so arranging them that one set of gills [illegible] work nearly in contact with the other set, that is, the front gills in rising will be nearly close to the back [illegible] when falling.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 5.—N° 1467.

HICKMOTT, Joseph.—"Improvements in preserving metallic articles from oxidation and decay."

Preserving metals when buried in the ground or otherwise exposed to damp or moisture, &c., by [illegible] application of lime or compounds of lime as an envelope to such metals.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 5.—N° 1468.

COURT, John.—(*Provisional protection only.*)—"Improvements in iraps or apparatus for receiving sewa[illegible] matters and separating the solid from the liquid portion thereof."

The sewage enters a chamber supported on lugs as a centre, the back of which has perforations to allow the liquid to pass out while the solid matters are arrested by a check below the perforations. The liquid after leaving the chamber passes through a flap valve and thence through pipes to the sea. Should it be carried back the valve closes. The chamber is placed in an outer box, on the sides of which the lugs rest, and when it is required to empty the chamber, it is tilted on its lugs and lifted out. Part of the top of the outer box can be removed to give access to the valve. A stench pipe may be fitted to the box.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 5.—N° 1469.

KENT, George.—"Improvements in ice preservers, refrigerators, and ice safes."

This Provisional Specification describes, firstly, various constructions of miniature ice preservers or refrigerators, also refrigerators for cooling bottles of wine, also ice safes for preserving meat and other provisions.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, May 5.—N° 1470.

MACGREGOR, Donald Robert, and TAYSEN, Peter.—(*A communication from Hans Wilhelm Matzen.*)—"Improvements in the manufacture of paint for the protection of iron and other metals from the "destructive influence of sea water, and for the prevention of fouling."

This Provisional Specification describes composing a paint of,—

30 parts quicksilver,
7 ,, thick turpentine,
55 ,, red lead,

and so much boiled linseed oil as will make it into a thickish paint; it also gives instructions for using the same.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 5.—N° 1471.

BEALE, William.—"Improvements in step and other ladders."

I construct ladders used for building and other purposes in two or more parts or sections, fitting one in the other by a telescopic arrangement. A pulley is mounted at top of each of the lower sections, over which is passed a rope or chain attached to the section above and below, while by pulling the rope of the lower section by hand or otherwise the whole may be raised simultaneously.

These ladders may be converted into steps by connecting the sections at top by a pivot and making them open out. The lower sections, when the steps or trestles are of great height are strengthened by crossties.

Instead of cords and pullies endless chains and chain wheels may be employed for raising the sections, operated by winch handles.

Each lower section has an endless chain passing over a wheel at top and bottom, and also attached to the bottom of the section above.

Each lower chain wheel works in addition in a rack on the section below.

Instead of connecting the endless chains to the sections I may make the upper chain wheels to work in racks on said sections, and instead of the chain wheels gearing with racks I may extend the shafts of said wheels and mount a pinion on each end gearing with racks on the sections for the purpose of raising or lowering the same.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, May 5.—N° 1472.

WALKER, William, and SMITH, Henry Frederick.—(*Provisional protection only.*)—"Improvements in apparatus employed for expressing oils from seeds or other substances."

Our invention relates to an improved envelope or covering for the cake of ground seed or other substance from which oil is to be expressed.

This envelope, which is intended to replace the ordinary horsehair envelope, metal coverings, or plates, we ike of a framework of metal or wood, or metal and wood combined of suitable shape, on which mework we interlace or otherwise apply horsehair or other fibrous material so as to form a covering or urface.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 5.—N° 1473.

KING, Frederick John.—"Improvements in the mode of preparing potatoes for preservation."

This invention consists essentially in forcing potatoe pulp after the potatoe has been sufficiently steamed or boiled through a bag or bags of canvas, or wire cloth, or other like textile fabrics by the aid of hydraulic or other pressure with a view to separating the peel or skins from the farinaceous edible portion of the potatoe, which is subsequently dried with a view to preservation.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 5.—N° 1474.

LAMB, John, and TOVEY, Samuel.—(*Provisional protection only.*)—" Improvements in bobbin frames " for carpet looms."

This invention has for its object a cheap and simple mode or method of imparting the requisite friction or drag to the bobbins containing the yarn employed in the weaving of Brussels and other like carpets; and consists essentially in dispensing with the pins, pegs, or axes hitherto used, and which are passed through the centre of each bobbin and rests in slots or notches cut in the frame; in lieu of this arrangement the bobbins, according to our invention, rest at their flanges upon inclined or curved bearing surfaces of wood, metal, or other suitable material secured to or formed on the sides of the frame. Additional surfaces or projections acting as friction surfaces being also fitted to the inner sides of the frame, so as to bear against the peripheries of both flanges of the several bobbins, either on the front or back thereof and at or about the height of the centre of the bobbins. By thus dispensing with all slots or notches in the frames their strength is increased and the cost of construction reduced.

We sometimes propose to make the friction surfaces adjustable, either together or separately, towards or from the bobbin flanges by the aid of adjusting screws, wedges, cams, or otherwise, whereby we are enabled to apply any amount of friction required upon the flanges of the bobbins to suit the particular yarn in use or the position or inclination of the frame. The bearing surfaces upon which the flanges of the bobbins rest may also be adjustable so as to vary their angle or inclination according to circumstances. The ordinary or other weights and guide wires are employed in the usual manner for maintaining the required tension of the yarns.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 5.—N° 1475.

NEWTON, William Edward.—(*A communication from Harvey Lester Lowman.*)—" Improvements in " machinery for forming pickaxes and other tools."

The eye of the tool is formed by two pairs of dies; one pair roughly forms the eye or prepares it for the second pair, which punches out the hole to receive the handle and at the same time finishes the eye.

The arms of the pick are rolled between two pairs of rollers in succession. One pair rolls two sides of the blank, and the other pair the other two sides. The ends of the blank are slit by rotary cutters to receive the steel points.

[Printed, 2*s.* Drawings.]

A.D. 1868, May 5.—N° 1476.

WILKINSON, John, the younger.—(*Provisional protection only.*)—" Improved machinery for printing " carpets."

The carpet is traversed through the printing machine by porcupine rollers, fixed guides being used to centre the fabric to the printing surfaces.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 6.—N° 1477.

SCOTT, Adam.—(*Provisional protection only.*)—" Improvements in the present method or means of attaching " clothes to the person."

This invention is applicable to cloaks and overcoats, but more particularly to bed-clothes and coverings used during sleep. It consists of an elastic spring with claws or clasps attached to each of the ends and furnished on the spring with a pendant of cloth or net work. The claws are attached to and grasp the clothes or bed-clothes, space being left for the insertion of the head and neck in the loop thus formed; the pendant is lain upon, and by these means the bed clothes remain wrapped round the person during sleep.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 6.—N° 1478.

STANLEY, John Martin.—(*Provisional protection only.*)—" Improvements in the method of and apparatus " for obtaining hot air for heating buildings."

The novelty of this invention consists in the simple and inexpensive way of utilising the heat by making it pass in a zig-zag manner under the heater, which thus absorbs more of the heat than if it passed straight through to the flue, the heater again giving off the heat to the air in the upper chamber.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 6.—N° 1479.

LUBLINSKI, Robert.—" Improvements in fasteners for the tips of umbrellas and parasols."

This invention consists of a small metal tube having a spiral spring fixed therein, with a chain or cord attached, the said tube to be fixed to the rib of the umbrella or parasol and form part thereof, or it can be made together with the rib in one piece.

When the umbrella is closed the chain draws out and passing round the tips fixes in a small hook on the outside of the tube, thus holding the ribs straight and close to the stick and preventing the possibility of their coming into collision with any object and getting broken, and at the same time allowing the silk to dry without damaging it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 6.—N° 1480.

WARREN, Thomas.—" Improvements in glass and other furnaces."

This invention relates partly to the kind of glass furnace described in Pocheron's Patent of 1866 (No. 1297), and consists in arranging in the cave beneath the tank a series of tubes or flues for the passage of air, and which are enclosed in chambers receiving the waste gases by flues leading down to them from outlets in the sides of the tank, whilst other flues lead the waste gases up again to the cone above; with which arrangement the necessary draught is maintained.

A second part of the invention is applicable to glass furnaces and also to pottery furnaces or kilns and to other furnaces in which the heat is applied in a chamber apart from the fuel grate or receptacle; and consists in causing air heated in the manner hereinbefore described, or otherwise, to enter the application or reverberatory chamber in jets or streams directed towards the centre of such chamber by passages or inlets formed at the sides of the openings, by which the fuel gases enter the said chamber from the grates or fuel receptacles.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 6.—N° 1481.

YOUNG, John.—" Certain improvements in the construction of ovens to be employed in the manufacture of fuel termed ' coke ' oil and gas."

The novelty of the invention consists in constructing or arranging the oven with a dome roof and a furnace beneath the floor of the oven in combination with a casing or cover enclosing the dome, through which cavity the waste heat passes as it proceeds from the fire to the chimney; by this means the roof of the oven is kept heated, which prevents condensation of the oil and vapours.

Secondly, the improvements consist in placing or applying the outlet pipe for drawing off the gas and vapours at the side of the oven, and as low as possible so that it is above or clear of the charge of coal, whereby the oil and vapours pass away as soon as they rise to the surface of the coal.

Thirdly, the improvements consist in the use and application of an exhausting apparatus to assist in abstracting the gas, oil, and vapours from the oven.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 6.—N° 1482.

CHUBB, Charles John.—" An improved mode of getting coal, slate, or other minerals, and an improved apparatus for effecting the purpose; which apparatus is also applicable to other uses."

According to this Provisional Specification coal or minerals are gotten without " holing," " kirving," or " nicking " being necessary by means of an hydraulic apparatus with an elongated plunger, or with several plungers on one bar. The apparatus is inserted into a hole formed in the working face, and is then expanded so as to force the mineral out. Or sometimes a flexible bag is used with a rod passing through it, and on the rod stops are fixed to restrain the bag from expanding endwise. The bag is enclosed in an expanding metal case.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, May 6.—N° 1483.

PALMER, Jarvis, and PALMER, James Brecknock.—(*A communication from Rudolph Herrmann.*)—(*Provisional protection only.*)—" Improvements in the manufacture of friction matches and fusees."

This Provisional Specification describes manufacturing friction matches and fusees with an igniting composition which has no smell and which contains no phosphorus, or only phosphorus in its amorphus state. A composition of hyposulphite of lead with other materials containing oxygen in a loosely combined state is employed for the purpose, the composition preferred being made from hyposulphite of lead, chlorate of potash, pyrolusite or native peroxide of manganese, oxide of iron, and chrome yellow, the whole being mixed with glue.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 6.—N° 1484.

DAVIES, Henry Jackson.—(*Provisional protection only.*)—" Improvements in compositions for cleaning " gold, silver, and plated goods."

According to this Provisional Specification a composition is employed consisting of borax, glauber salts, blue vitriol, cyanide of potassium, alcohol, and aromatic spirits of ammonia.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 6.—N° 1485.

HENDERSON, Arthur Charles. — (*A communication from Lazare Lévy.*) — " Improvements in the " mode of manufacturing albumen, and in the apparatus connected therewith."

This invention relates to the treatment of blood (as taken from the slaughter house) for the manufacture of albumen.

The blood is placed in a tub or vessel from whence its contents are transfered to a sieve or drainer, which is done by placing the sieve over the tub and turning the latter upside down, so as to leave the sieve over a across a second vessel or receiver, after which a loose ring is applied to hold the contents in place.

The clotted matter is then cut through and through in various crosswise directions for the purpose of shredding the veins, in order more perfectly to extract the albumen.

The fluid matter running from the sieve or drainer into the second mentioned vessel or receiver is then allowed to remain 24 hours, when a sliding or vertically adjustable pipe is lowered to allow it to run into a third vessel, where it is further allowed to remain say 24 hours prior to being again run off by lowering a second adjustable pipe so as only to draw off the fluid albumen, leaving the sediment behind in the last named vessel.

The tub and vessels should all be made of zinc, to ensure cleanliness.

As the fluid albumen is decanted from the last vessel it is allowed to run into a glass tray, which is then removed to a heating chamber, and exposed to a temperature of 65 degrees Reaumur for 24 hours, and is afterwards allowed to gradually cool for 24 hours at a temperature of 30 degrees Reaumur, when it will solidify, and be in a condition for bottling and packing for the market, or for use, as and for the purposes albumen is ordinarily employed.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 6.—N° 1486.

DRUMMOND, Samuel, CLARE, Joseph, and HUGHES, Richard.—(*Provisional protection only.*)— " Improvements applicable to the prevention of fraud in the collection of fares in omnibusses and other " carriages, and in apparatus connected therewith."

This invention consists in causing the money for a fare to be deposited in a receptacle from which it cannot be subsequently abstracted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 6.—N° 1487.

HALL, Frederic Thomas.—(*A communication from Edouard Heit.*)—" Improvements in the manufacture " of railway and other like tickets to adapt the same as mediums for advertisements."

Forming tickets with pockets or receptacles for advertisements.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 6.—N° 1488.

NEWTON, William Edward.—(*A communication from Charles Horace Noyes.*)—" Improvements in " combs."

Forming combs out of sheet steel by stamping and then enamelling or japanning them to prevent oxidation.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 6.—N° 1489.

HENRY, Michael.—(*A communication from the Société Coignet père et fils et Compagnie.*)—" Improvements " in the manufacture of steel and iron and other metals, and in furnaces employed in the said manufacture."

The ores, minerals, metals, oxides, sulphides, metallic or metalliferous substances or compounds to be reduced, roasted, smelted, converted, cast, manufactured, or treated, and the lime, clay, fluxes, or other lid accessories used in such processes, and the fuel or carbon required in the operations, or a portion of ch fuel or carbon, are reduced to a state of fine powder and mixed together in properly regulated quantities, d triturated or agglomerated or rammed and compressed, the mixture being slightly moistened so as to tain it in a state of pasty powder or pulverulent paste, which is formed into blocks and dried if required. he process of forming these blocks resembles that adopted in forming the blocks of Coignet's well known ton. The blacks are fed into the top of the furnace. A furnace is described in which the gaseous or riform matters are drawn, forced, or driven down and escape from the bottom of the furnace instead of om the top. A blast may be introduced at the top of the furnace, or the down draft may be obtained by fan, blower, or other apparatus, or by a chimney or shaft placed beyond a hearth chamber, crucible, or ceptacle situated at or near the bottom of the furnace, and which receives the reduced cast or otherwise eated metal or the metallic or metalliferous products of the operation. The products of combustion travel st the hearth and through a refrigerator or condenser. The blocks may be disposed in alternate layers ith additional fuel. The furnace recommended is oval in section, but whatever be the shape the bottom ould be contracted to accelerate the flow of the gases. Orifices or passages may be formed at various parts f the furnace for admitting air or the like.

[Printed, 10d. Drawings.]

A.D. 1868, May 6.—N° 1490.

HOLT, Samuel, and KEARSLEY, James.—" Improvements in means or arrangements for making observations on railways for the purpose of preventing accidents, and in signalling or communicating between one part of a railway train and another."

1. It relates to means for making observations by telescopic glasses on railway engines and trains, and onsists in an elastic stage for the observer to stand upon, and in mounting the telescopic glasses upon prings or upon a stand from the elastic stage so as to free the observer and the instruments from the fects of vibrations and ossillations. The telescopic glasses are made either single or binocular, and with hangeable lenses to suit the weather and the state of the light; and the said glasses are provided with "rubbers" to remove dust from the object glasses, or jets of water are used for this purpose. Hoods to hade and protect the object glasses are provided, and pads near the end of the eye glasses are used to protect the observer against jolts. By these means (each being provided with telescopic glasses) the guards and drivers can communicate by printed cards or dials which may illuminated at night. 2. In a semaphore, lamp (for night signals) bell, and whistle applied to each carriage, which can be actuated by handles in any compartment of the carriage by the passengers, by which means signals may be made to passengers in different compartments and to the guard and driver. 3. The invention consists in mounting telescopic glasses for the use of pointsmen and others by elastic arrangements to prevent vibrations, as described under head 1. 4. In the use of the camera obscura to bring an image of the train into the guard's van or other carriage of a train, so as to be constantly under his observation.

[Printed, 1s. 4d. Drawings.]

A.D. 1868, May 6.—N° 1491.

WALKER, James Graham, and STEIN, Charles.—(*A communication from William Walker Gibson and Walter Berry.*)—" Improvements in separating tares and other impurities from grain and other seeds, and in the apparatus or means connected therewith."

The feature of novelty which constitutes this invention is, the conducting of the grain through a spout on o a travelling cone, which by its motion causes the tares and other impurities to be separated by their own motion in falling, being more rapid than that of the grain, causing them to fall over a ledge clear of the grain.

[Printed, 10d. Drawing.]

A.D. 1868, May 6.—N° 1492.

WALKER, James Graham.—" Improvements in dressing millstones and in the machinery or apparatus employed therefor."

The feature of novelty which constitutes this invention is the employment of a horizontal slide upon which a saddle travels carrying a cross slide, to which the cutting mechanism is attached. A lever from he cross slide is formed so as to retain the tools, and the cutting is effected by giving the requisite motion o this lever.

[Printed, 10d. Drawing.]

A.D. 1868, May 6.—N° 1493.

HARVIE, William.—" Improvements in the construction of lamps and lanterns, and in lenses employed therewith."

The feature of novelty which constitutes this invention is the construction of the lamps in two divisions or chambers, one inside the other, with an air space between for conducting air to the burner; this form also prevents any inward current or rush of air form extinguishing the light.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 6.—N° 1494.

JOHNSON, John Henry.—(*A communication from Jearum Atkins.*)—(*Provisional protection only.*)—"Improved means for increasing the draught in steam boiler and other furnaces or fire-places."

This invention consists of certain combinations of expanded tubes or flues disposed on the ends of the boiler tubes so as to protrude into the smoke box, the larger end in all cases being the discharging mouth. Groups of similar expanded tubes are also fitted inside the chimney both above and below the mouth of the blast pipe, and the blast pipe is provided with a number of contracted nozzles at its upper end, such nozzles being situate just below the lower ends of the group of expanded pipes in the chimney and discharging the steam up such pipes."

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 7.—N° 1495.

MUIR, Matthew Andrew, and McILWHAM, James.—"Improvements in power looms."

A first improvement is applicable to what is known as the "under" picking motion, and consists in applying a parallel motion to the picking stick, and in adapting a spring thereto in such a way as to gradually resist the continuation of the stick's movement after throwing the shuttle, and so as to act as a check upon the shuttle when coming home into the box by holding the stick at a short distance in from the end of the box.

A second improvement consists in arranging parts in connection with a loose reed and shuttle-box protectors so that on the shuttle failing to reach its box a locking detent is set free and a spring either sets the reed free or actually moves it back, so that when the shuttle stops in the shed the warps cannot be injured by any pressure such as that to which in ordinary arrangements the shuttle is subjected in forcing back the reed.

A third improvement relates to the manner of actuating the vibrating rail used for relieving the strain on the warps which the shedding action tends to produce, and consists in shaping the cams that act, and in arranging the levers and connections that communicate the action to the rail in such a manner as to keep the tension on the warps as uniform as possible.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, May 7.—N° 1496.

BONNEVILLE, Henri Adrien.—(*A communication from Joanny Laurent.*)—"Improvements in spring "mattresses and seats."

This invention relates to a new kind of spiral spring, one half of the spires of which are juxtaposed, whilst the other half is wound with the spires apart, specially used in seats and mattresses.

[Printed, 8*d*. Drawings.]

A.D. 1868, May 7.—N° 1497.

PICKERING, Benjamin.—"Improvements in apparatus used in expressing oils from seeds and from "substances in which such matters are contained."

The chief features of novelty in my invention are, firstly, the manufacture and use of rolled iron or steel plates having transverse corrugations or ribs only, and none whatever running longitudinally; and, secondly, the construction and use of a division piece with the thin plates and press boxes, so as to form two cakes in each box, the division piece being free to move vertically in the box with the material under compression.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 7.—N° 1498.

GREEN, Richard Angell.—"Improvements in bearings, shafts, or pivots applicable to machinery, "apparatus, instruments, and other useful purposes."

According to this invention, improvements in the form and dimensions of bearings and bearing surfaces are effected.

As an example of a pulley bearing, which is also applicable to turntables and other bearings of the nature of shafts or pivots, the nave is enlarged, and has a circular recess cut on each side, in which recesses discs

d, the inner surfaces of which are also recessed, leaving annular rings to bear on the recesses, the
cessed containing the oil or other lubricant. The holding brackets or the standards to support the
e fixed on each side of the discs by screws entering the discs, thus clamping the parts together.
cing these bearings horizontally a turntable may be worked, and the increased bearing surfaces will
the tendency to oscillation, which by ordinary bearings is effected by supporting rollers at the
rence. For bearings of instruments, an enlarged head is made to the pivot, and the moving part
strument is recessed to receive the same, and the three parts are fixed together by a screw.
ed, 10*d.* Drawing.]

A.D. 1868, May 7.—N° 1499.

RSON, ARTHUR CHARLES.—(*A communication from Octave Victor Fournier.*)—" Improvements
manufacture of plates for heliographic engraving."
nvention consists in, first, taking a photographic proof on glass of the grain or hatching desired,
s been previously printed or traced on a surface of any kind; secondly, in obtaining by trans-
a proof positive on glass of the subject desired to be reproduced; these two proofs are then placed
the other, and a second negative proof taken from them by transparency; this latter then serves for
g a heliographic plate by the ordinary and well known means.
ted, 4*d.* No Drawings.]

A.D. 1868, May 7.—N° 1500.

RSON, ARTHUR CHARLES.—(*A communication from Le Comte Henry de la Tour du Breuil, Le
omas de Dienheim Brochocky, and Horace Baynes.*)—" An improved mode of renovating files by an
-chemical process."
vention consists in submitting old files to the simultaneous action of an electric current, and a
of acids composed of two parts by weight of azotic acid to one part of sulphuric acid and eighteen
water.
es having been previously freed from grease by placing them in a warm bath of soda or potash are
brushed to remove any adherent particles from the teeth; they are then suspended separately by a
common to all in the above named solution.
ectric current is established by placing the positive pole or charcoal in communication with the
eans of the rod supporting them, and by immersing the negative pole or zinc in the solution; and
tained during the whole operation, which cannot previously be determined, but must depend upon
ition of the files, their dimensions, size of teeth, temper of the steel, and strength of the current, and
ty of concentration and dilution of the acids, but on an average not less than half an hour is

ed, 4*d.* No Drawings.]

A.D. 1868, May 7.—N° 1501.

SH, KENNETH HENRY.—(*Provisional protection only.*)—" Improvements in the construction of
ching tools intended to be applied to fire-arms."
velty of this invention consists in covering the joint of an entrenching tool with a sliding tube or
rigidly connecting the handle to the blade of the tool when required for use, and to enable the
be easily turned or folded back when out of use for fixing the tool in the stock of a gun.
ed, 4*d.* No Drawings.]

A.D. 1868, May 7.—N° 1502.

W, ROBERT.—(*Provisional protection only.*)—" Improvements in apparatus for supplying water
withdrawing water from baths, wash-basins, and other receptacles."
atures of novelty in this invention consist in constructing an apparatus for supplying hot and cold
baths, wash-basins, and other receptacles more speedily than has hitherto been practicable, and in
convenience for taking off the "overflow" and waste water in one and the same article or
s.
d, 4*d.* No Drawings.]

A.D. 1868, May 7.—N° 1503.

SS, ADOLPH.—" An improvement in pipes for smoking."
onsists in dispensing with the plug usually used at bottom of bowls of meerschaum and other
forming the lower part of the bowl considerably thicker than the upper, the increase in thickness
circular ledge about the middle of the bowl.
d, 6*d.* Drawing.]

A.D. 1868, May 7.—N° 1504.

JOHNSON, John Henry. — (*A communication from Leonard Erni.*) — "Improvements in sewing "machines."

This invention relates more particularly to what are know as shuttle or lock stitch sewing machines, although certain of the improvements are applicable to other descriptions of sewing machines.

According to this invention the motions for the shuttle and feed are obtained by means of a vibrating vertical lever, the upper end of which is actuated by a crank, cam, or eccentric on the driving shaft carried in the fixed arm or overhanging bracket of the machine, whilst the lower end of this lever is connected by a sliding ball and socket, or "universal," or other suitable joint with one end of a horizontal vibrating lever working on a vertical centre pin or pivot secured to the under side of the bed plate. The opposite or free end of the horizontal lever carries the shuttle holder and driver, the shuttle being caused to reciprocate horizontally in the arc of a circle, and being curved on its flat side from the point to the heel to suit the curved surface against which it works, the usual shuttle race or channel being dispensed with. This horizontal lever carries an adjustable inclined piece, which may consist of a cylinder having one end tapered or made conical, such cylinder having its position adjusted longitudinally in its holder by the aid of an adjusting screw which serves to vary the length of stitch. As the inclined or conical piece reciprocates longitudinally in company with the before mentioned horizontal lever, it imparts a vertical rocking movement to the feed lever, which is provided at one end with an antifriction bowl or roller, maintained by the action of a spring against the incline or conical ended cylinder, whilst the other end of the feed actuating lever is connected to a vibrating arm working freely on the axis of the feed wheel, and consequently transmits a vertical reciprocating or vibrating motion thereto.

This movement is caused to produce an intermittent rotatory motion in the feed wheel itself, through the aid of one or more friction pieces which are of a conical, tapered, or wedge form, and work into a correspondingly shaped annular groove in the feed wheel, whereby a better hold is obtained thereon. By altering or adjusting the position of the inclined piece it follows that more or less of the incline will act upon the feed lever, and consequently the throw of that lever will be varied and the length of the stitches correspondingly increased or diminished. The needle is carried in a vertical sliding holder which derives its motion direct from a crank, pin, or cam on the front end of the driving shaft, working in a differential slotted piece secured to the needle slide.

[Printed, 1*s*. Drawing.]

A.D. 1868, May 7.—N° 1505.

GEDGE, William Edward. — (*A communication from Messieurs Taillotte and Henry Caudron.*)—(*Provisional protection only.*)—"An improved portable apparatus for administering resinous sudations."

This apparatus consists of a fire clay vessel containing an ashpan and a grating and muffle, both of fire clay, the head of the vessel being removable and provided with four openings, the whole surmounted by a chimney, also removable at pleasure.

Fuel is burnt within the vessel until it has attained a certain degree of heat, the chimney and head of the vessel are then lifted off, the muffle is withdrawn, filled with resinous wood and reintroduced. The head and chimney are then replaced, and the chimney opening being closed, the resinous vapour which now arises within the vessel is conducted by tubes from one or other of the openings in the head to the bed of the patient, or the chimney may not be replaced, and a tube be substituted for administering the sudorific bath.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 7.—N° 1506.

GEDGE, William Edward. — (*A communication from Parent-Montfort, Page-Drino, and Cimetière-Norbert.*)—(*Provisional protection only.*)—"An improvement in throstle frames for spinning flax, tow, hemp, "jute, silk, wool, or cotton."

The object of this invention is to lessen the waste in spinning by applying to any throstle frame a mechanism composed of an eccentric which equipoises and governs two rods, one of these rods ends in a hook slightly held by the thread beneath the drawing roller, and when the thread breaks this rod retires, giving motion to the other rod carrying a plug, and so guided that this plug enters the funnel in which passes the roving, pressing upon the roving in such a way that it breaks between the feeding cylinder and the funnel producing no waste. The rod carrying the plug may be weighted to drive the plug more rapidly into the funnel.

[Printed 8*d*. Drawing.]

A.D. 1868, May 7.—N° 1507.

EVANS, Robert, and BRUCE, John.—(*Provisional protection only.*)—"Improvements in machinery or "apparatus for dressing millstones."

This invention consists of machinery or apparatus for dressing or cutting a series of fine parallel lines or grooves on millstones. The said machinery consists essentially of an arm sliding in guides, to which arm by means of a connecting rod worked by a crank or excentric on a rotating shaft a rapid reciprocating rectilinear motion in a horizontal plane is communicated. The free end of this arm carries a diamond (or diamonds).

By the motion of the arm a fine groove is cut by the diamond on the "quarter" of the millstone. By moving the arm the required distance another groove may be cut and so on without shifting the position of the machinery. The machinery is worked by hand or by steam or other motive power.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 7.—N° 1508.

BRUCE, John, and EVANS, Robert.—"Improvements in bolters used for dressing flour and for other "like purposes."

This invention consists in fixing the beaters against which the cloth of the rotating frame of the bolter strikes oblique to the axis of rotation of the said frame, and also in curving the said beaters. By these means the bolting cloth receives a wave like blow from end to end in the direction of the length of the reel instead of a blow through its whole length at one time as is usual. The bolting cloth thereby wears longer and a more rapid rotation may be given to the reel than can be given to the reels of ordinary bolters. The reel can consequently be driven faster than the reel of an ordinary bolter.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 8.—N° 1509.

MILLER, Richard Kerr, HERBERT, Abraham Burbery, and WATSON, Henry.—(*Provisional protection only.*)—"Improvements in 'knotters' for straining paper pulp."

The feature of novelty which constitutes this invention is the construction of the "knotters" of vulcanite instead of metal as hitherto.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 8.—N° 1510.

BOWDEN, George, and DICKINSON, John Reed.—"Improvements in apparatus or means for "protecting the points of brushes and pencils."

This invention consists of a bar of wood, gutta percha, or other suitable material, grooved or fluted, and either round, oval, square, or flat. The flutes or grooves are for holding pencils and brushes, which are kept in their places by an elastic ring or rings, and the whole enclosed in a wrapper attached down one portion of the bar.

The bar itself may be hollow to allow of carrying surplus brushes and pencils.

[Printed, 1*s*. Drawings.]

A.D. 1868, May 8.—N° 1511.

PENRICE, Herbert Newton.—"Improvements in machinery employed in forming tunnels and galleries "in rocks."

This Provisional Specification describes improvements in tunnelling machines. The head of the machine is a strong disc, which is divided into four or other number of broad arms with radial sides by a corresponding number of spaces being left in it of sufficient size for a workman to pass from one side of the disc to the other when it is in the tunnel. On the face of the disc are a number of grooves, into which cutters are fitted so as to present concentric rings of **V** form cutting edges; these cutters are so arranged that the length of edge which produces each groove is proportioned, or nearly so, to the length of the groove, so that every part of the edge has as nearly as possible the same amount of work thrown upon it, and the cutting edges of each ring are practically continuous from side to side of the broad arms or portions of the disc. The cutters are held in their places by wedges entering the groove between the cutters, and held in their places by stems passing through the disc and receiving screw nuts or cottors beyond.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 8.—N° 1512.

HUSBAND, William, and DŒRING, Frederick Bernard.—"An improved mode of and apparatus " for securing or holding the stands or frames of rock, boring or excavating machines, part of which " apparatus is applicable to connecting such machines with their stands or frames."

The stands or frames are held by atmospheric pressure. A disc of rubber or other material is placed on the floor of the tunnel, and a vacuum is formed below it.

The disc is held between plates, the upper plate being forged to a bar connected by a ball joint to an arm, which in its turn is connected by a double joint to the stand or frame. This mechanical arrangement applies to connecting the machine to its stand in shaft sinking; the bars on which the engine works rest on the bottom of the shaft, and are connected by the jointed bar and arm above mentioned to beams fixed horizontally in the shaft.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 8.—N° 1513.

BROOMAN, Clinton Edgcumbe.—(*A communication from the Company or Society " Cyprien Tessié du Motay and Company."*)—"Improvements in preparing zirconia, and the employment of the same to develop " the light of oxyhydrogen flame."

Zirconia is agglomerated into sticks, discs, cylinders, or other forms, and these sticks, &c., when introduced into an oxyhydrogen flame, develop the light.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 8.—N° 1514.

JAMES, Arthur.—"Improvements in machinery for polishing needles."

According to one part of this invention a rotatory polisher is mounted so that its upper part projects through a slot in a table, and the needles carried by a band are moved across the polisher in an oblique direction. The needles thereby receive a rotatory motion, and every part in succession is exposed to the action of the polisher. By placing the slot and polisher oblique to the edge of the table, the needles may be made to travel in a direction parallel with the edge of the table.

Another part consists in placing the needles in a series of semi-cylindrical grooves in a table and bringing down upon them a similar grooved table. The needles are thereby enclosed in tubular holes through which they are pushed backwards and forwards and thus polished.

Another part consists in arranging the needles on a table under the ordinary polisher, and carrying the said needles forward under the polisher. After the needles have been exposed through their whole length to the action of the polisher, the table is depressed, and the needles brought back and turned; they are again exposed to the action of the polisher, and so on, until they are sufficiently polished. The acting surfaces of the polishers are either made concave, or convex, or fluted, or the polishers may be made conical or taper.

[Printed, 5*s*. Drawings.]

A.D. 1868, May 8.—N° 1515.

SECK, William.—"Improvements in machinery or apparatus for hulling and winnowing grain."

The apparatus consists of a vertical casing of hard material with its inner surface grooved, corrugated, or equivalently formed and provided with inclined or other circular shelves. A part or parts of the casing is or are formed of wire gauze or perforated to form a sieve or sieves. This casing contains a shaft rotating in bearings and carrying radial arms having vanes for creating a draft, and such arms also carry a perforated inner casing, having around its circumference a number of vanes, rings, feathers, or circular shelves with projections which are carried around the spaces between the shelves on the outer casing and thus treat the grain which passes downward, the bran or integuments being blown through the sieve or sieves by the current of air.

[Printed, 1*s*. Drawing.]

A.D. 1868, May 8.—N° 1516.

JONES, John Allcock.—"Improvements in the manufacture of iron and steel."

This invention consists in so cleansing or partially cleansing cast iron of impurities, such as sulphur and phosphorus, and obtaining it in such a condition that it may when removed from the operating furnace be melted in a furnace into steel or be balled up, hammered, and rolled into iron bars without the necessity of being submitted to a puddling process.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 9.—N° 1517.

GRIFFIN, George Featherstone.—"A certain novel application to the corking of bottles, enabling the "cork to be withdrawn without injury thereto."

This invention consists in introducing into the neck of a bottle, together with the cork, a band or strip of other material in such a way that part of the foreign material projects above the cork, offering a loop or other hold, by the aid of which it may be drawn from the bottle, bringing the cork with it. Thus no corkscrew is required and the cork remains intact.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 9.—N° 1518.

BOWLER, John Cobb.—(*Provisional protection only.*)—"Certain improvements in castors or similar "rolling supports for furniture."

The novelty and feature of the invention consists in forming the castor in three parts, viz., an upper permanent fixture to be fixed to the legs of furniture, a lower or adjustable cap, and an internal ball, which rolls within the hollow of the two caps, the lower part being adjustable so as to be lowered on to the floor when not required to roll.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 9.—N° 1519.

NORMAN, John.—"Improvements in calcining, burning, or oxidising ores, minerals, metals, and other "substances, and in reducing oxides and salts of metals and other substances, and in apparatus for these "purposes."

The improved apparatus consists of a series of two or more short revolving cylinders of a prismatic shape arranged at different levels, so that the one will deliver into the other. These cylinders are all mounted so that they may with facility be inclined more or less from the horizontal position, thereby regulating more or less the discharge of matter passed through them. The feed is also regulated in the hopper by a slide valve, and the delivery can also be regulated by the speed at which the cylinders are driven. By these means complete control is secured over the quality, regularity, and amount of work done.

By a simple arrangement of valves in the discharge and gas escape pipes the retorts can either be worked with a current of air, gas, or steam passing through the retorts, or be worked close for reducing purposes. The retorts or cylinders are heated externally, either by a special fireplace under the lower heating retort, thence passing round the second (and the others if more than two), and thence to the chimney, thus economising all the heat, or they may be heated by gas and air or by the waste heat from smelting or other furnaces.

In calcining some substances which give off offensive gases, or gases that it is desirable to condense, the lower retort or cylinder is caused to finally discharge its hot contents into a cooling cylinder, which is also made to revolve slowly, and through which is passed a current of cold air against the current of calcined ore or other substance, which carries also back into the cylinders a great deal of waste heat. This cylinder may also be cooled by immersing it partly in water and causing streams of water to play over it.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 9.—N° 1520.

EVERITT, William Edward.—"Improvements in casting copper tubes and cylinders."

The object of this invention is to remedy the defects arising from the air holes and cracks in the casting of copper tubes and cylinders, for which purpose a mould is employed of an elliptical form internally with an internal sand core, the ends of the mould also being plugged; molten metal is run in the mould through a lip; the casting is subsequently removed to the action of a powerful press, which has the effect of compressing the copper.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 9.—N° 1521.

HAZARD, Henry Herbert, and GRIMWOOD, William.—(*Provisional protection only.*)—"Improvements in coiling or revolving shutters."

This invention consists of an improved method of joining together the laths or strips of which revolving shutters are formed, by which instead of the usual hinges metal loops are used, a set of which are rivetted or fixed in the lower part of one lath (at suitable distances), and are inserted or hooked into a set of holes at corresponding distances perforated at the top of the lath adjoining.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 9.—N° 1522.

MOULTON, STEPHEN.—"Improvements in the treatment of vulcanized or cured india-rubber for "obtaining a substance of a mossy nature suitable for printers' inking rollers, cushions, and other "articles."

The vulcanized rubber is reduced to powder, put into moulds, and subjected to a second vulcanizing heat, whereby a homogeneous mossy substance is obtained suitable for cushions, the body of printers' rollers, &c.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 9.—N° 1523.

WAYGOOD, RICHARD.—"Improvements in stoves or apparatus for cooking."

The fire-box placed below the hot plate forms the bottom of the oven, and can be used as an oven or for boiling or broiling. The flues radiate right and left up each side of the oven, warming the upper part, and lead into a hollow chamber, the top of which forms another hot plate. This stove is portable.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 9.—N° 1524.

CLARK, ALEXANDER MELVILLE.—(*A communication from Jean Mathieu Deprez.*)—"Improvements in "breech-loading fire-arms."

The breech is closed by a flat plate pivotted at the rear end, opening out horizontally at one side of the gun. This plate is connected to a sliding plug carrying the striker, which on being drawn back allows of the insertion of the cartridge either with a paper or metallic case. The plug is then replaced in position by the plate which catches on the barrel, and is so held closed. The act of drawing back the sliding plug cocks the hammer, and the trigger is held when the former is in the full cocked position by a safety catch which requires to be depressed at the moment the trigger is pulled in order to release the same.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, May 9.—N° 1525.

WILKINSON, WILLIAM HENRY.—"An improved method of combining or uniting types and "constructing cases to contain the same for the purposes of type composition."

This invention has especial reference to a system and method of composition by the use of word types and other combinations together with the ordinary letter types. My invention consists, first, in the use of india rubber and other elastic materials to combine or unite the letter types with sufficient firmness for the ordinary usage of composition and distribution. The cells or boxes are to be constructed, colored, or otherwise marked so as to present the shape of a letter or other familiar device, by which the table may be designated and known whether in the case or out of it.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 9.—N° 1526.

CRANE, JOHN HENRY.—(*Provisional protection only.*)—"Improvements in breech-loading fire-arms."

This invention has reference to breech loading fire arms in which the barrels are hinged on a joint at the end of the body, so as to fall or be depressed for the reception of the cartridge; and consists of novel arrangements for operating the locking action in conjunction with the double grip formed in the lumps under the barrels.

The horizontal double locking bolt turns on a centre, and contains an internal spring, and it is unlocked from the double grip locking bolt by means of a small lever, the spring effecting the locking action.

The body has a small slot cut on one side near the edge of the recess or groove, into which the lumps descend. This slot contains a tilting lever or bar, one end of which is pressed upwards by a spring, and the other enters a step cut in the horizontal locking bolt, so that the depression of the barrels on the tilting lever frees the lock and enables it to fly back by the action of the spring to lock the gun, but when the barrels are to be depressed the locking bolt may be easily reversed by the lever motion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 9.—N° 1527.

SEYDEL, GEORGE THEODORE.—"Improvements in apparatus for heating aud ventilating buildings, part "of which improvements are also applicable to steam boilers or steam generators."

The improved steam heating apparatus consists of a steam generator composed of vertical wrought iron tubes connected at the top or at top and bottom. The steam is carried away by a steam pipe to the different heat diffusers which are composed of a number of vertical wrought iron pipes connected at top and bottom and surrounded by a funnel; the air circulates through this funnel, and receives the heat emanated from the steam; the latter is condensed and conveyed back by a return pipe to the generator. The heat transmitted to the latter is regulated by a valve in connection with a double flue, by which the hot gases are either admitted to the generator or carried direct into the chimney. The circulation of air through the funnel can be regulated by a throttle valve. A valve can be provided to ventilate the room by letting part or the whole of the hot air pass into a ventilating flue.

[Printed, 1*s*. Drawing.]

A.D. 1868, May 9.—N° 1528.

HALL, SYDNEY. — (*Provisional protection only.*) — "Improvements in the manufacture of artificial "fuel."

This Provisional Specification describes manufacturing artificial fuel in blocks of uniform size by covering the face of the plunger employed to compress the fuel with numerous thicknesses or pieces of paper, metal, or other material, so that at each stroke of the plunger the paper or metal may adhere to the fuel and be left behind when the plunger returns, so as to form a separation between the already moulded fuel and the next charge.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 9.—N° 1529.

BIGGS, JOHN HOWARD WORTHINGTON.—"Improvements in apparatus for selecting warp threads and "for drawing them through the eyes of harness and through reeds."

This Provisional Specification describes the selecting warp ends by means of a screw or screws of increasing pitch, or by revolving or reciprocating hooks. When the selected thread passes from the selecting mechanism it locks it until this thread is taken away.

Or the thread may pass from the selecting mechanism into a comb, and then the thread in passing off is caused to touch a trigger, and then the apparatus shifts so that the next thread is delivered into the next space in the comb.

When it is desired to draw the selected threads through the eyes of harness and through a reed a hook is passed by the mechanism through the eye, it catches the selected thread, and in retiring draws it through the eye and over the reed, another hook then passes through the reed, catches it, and draws it through.

[Printed, 2*s*. 10*d*. Drawings.]

A.D. 1868, May 11.—N° 1530.

MOORE, RALPH. — (*A communication from Claus Spreckles.*) — "Improvements in the manufacture or "treatment of crushed sugar."

The invention consists in taking sugar from the centrifugal machine and after compressing it into cakes, drying it first at a mild heat and afterwards at a higher temperature. The dried cakes are finally, crushed, and by these processes crushed sugar is obtained in a much shorter time than by the ordinary processes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 11.—N° 1531.

CROSSLEY, JAMES.—(*Provisional protection only.*)—"Improvements in looms for weaving."

An ordinary tappet or cam is fixed on each end of the crank shaft, each of which tappets will actuate a lever hinged to the loom end when a friction roller is placed in suitable position for that purpose. These levers are connected by rods and other levers with the change shuttle boxes, and the friction rollers are connected to a combination of levers and rods by jacquard or other indicating apparatus. A tappet is fixed on the jacquard shaft which operates the said levers and rods to place one or other of the rollers out of position with the box; tappets and spring catches are applied to hold them so until liberated by the action of the jacquard or other indicating apparatus which actuates or moves the said rollers into position for contact with the noses of the tappets. Spring catch levers are also applied to hold the boxes in suitable position for picking the shuttles therefrom, which are actuated by the jacquard or indicating apparatus simultaneously with the other operations.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 11.—N° 1532.

WEBSTER, WILLIAM, and BARNES, ROBERT WILLIAM. — (*Provisional protection only.*) — "Improvements in head and waist rests for the use of photographers."

Here the object is to provide rests which can be easily and expeditiously brought into position. A h zontal bed or carrier supporting a sliding block whereto the rising stem is affixed is employed. The slid block is made to traverse laterally by a toothed wheel which it carries gearing into a rack on the bed b screw passing through the block, or by other mechanism. The part of the stem attached to the slid block is grooved or hollow, and a bar or rod capable of being slid vertically is fitted therein, set screws other fasteners being provided. The caliber supports are connected at or near the top of the bar or rod a slide so as to be easily moved backwards and forwards, and when required a hinge or joint is formed allow them to be moved sidewards.

The invention also consists in fastening the rising stem of ordinary rests to the sliding block support as aforesaid on the bed or carrier.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 11.—N° 1533.

BOUCHER, Alexandre Désiré Eugène.—"An improved process of moulding hollow metallic piec "provided with a single aperture, such as shells, hollow balls, door knobs, and all articles of the sam "description."

The model of the hollow piece to be moulded is laid on a sand bed, as in the usual way, but the projectin hub intended for the core instead of being inserted directly in the sand is surrounded by a movable or fix wrapper or envelope. The projecting hub of the core must be long enough to project about one inch fro the upper moulding sash. The sand is squeezed in the mould as usual, and on removing the model t projecting hub comes out with it, its wrapper remaining in the sand, being attached to the upper mouldi sash. The core is formed as usual around a skeleton, of which the shape and size in the place correspondin to the projecting hub of the model are exactly of the same size and shape as the latter.

The core is then put in the sash before casting, no particular care being needful, because the empty spa through which it is slid is no longer movable or easily deteriorated, but is an empty metallic space, and th core cannot occupy any other place than that intended for it; the upper part of the core is then fastened i the wrapper by means of a peg.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 11.—N° 1534.

BOUCHER, Alexandre Désiré Eugène.—"Applying enamelled cast iron to supersede china an "crystal in certain household articles of furniture and fixtures, such as door knobs, heads of hand rai "and other similar articles."

This invention consists in the substitution of enamelled cast iron in lieu of crystal or china in the manu-facture of heads of handrails or balustrades, door knobs, and analogous articles, the advantages being that this material is both cheaper and stronger, while in other respects almost identical with those it replaces.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 11.—N° 1535.

DIX, Alexander Mills.—"An improved mode of and apparatus for supplying finings or other liquids t "casks or other vessels."

Finings are forced into casks through a small hole made for the purpose in the bung or shive; the intro-duction is effected by a three way tap and a force pump or other mode of obtaining the required pressur The tap has two nozzles, one being introduced into the hole in the shive, while the other is outside the cask; the latter nozzle serves to draw off froth or gas or some of the liquid contents of the cask. Should an liquid get past the packing in the pump barrel it is returned by a small pipe at the upper part of th barrel.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 11.—N° 1536.

BROOMAN, Clinton Edgcumbe.—(*A communication from Eugene Alexandre Frederic Goguel.*)—(*Pro-visional protection only.*)—"Improvements in furnaces or heating apparatus."

The essential features which characterize this apparatus or furnace are, 1st, complete and successi reduction of the fuel in the same apparatus without interruption of heat, in several communicating firepla 2ndly, ascent and descent of the gases arising from the first combustion, or injection of steam or water int the channels which lead these gases from one fireplace to another, or even the draught or suction of a blowing apparatus, as means of increasing their draught, of increasing their pressure, of producing hydrogens by the decomposition of this steam or water, and of facilitating the leading of the gases from one point to another, and of directing them with a certain pressure out of this apparatus. 3rdly, the hermetic and almost continuous mode of charging owing to the reduced volume of the charge. 4thly, the complete enrichment of the gases developed in all the parts of the apparatus by causing the gases to return into the apparatus which has generated them, in order that they may not issue therefrom until they have been enriched therein through a layer of incandescent fuel. 5thly, the simple and economical mode of heating the new air for burning the combustible gases in a special combustion chamber. And, 6thly, a combustion chamber, one of the sides or walls of which is formed with holes by which the burnt gases pass as through a sieve, in order to enter the apparatus to be heated.

[Printed, 4d. No Drawings.]

A.D. 1868, May 11.—N° 1537.

LAKE, William Robert.—(*A communication from Thomas Jefferson Strong.*)—"An improved device "for holding scrubbing brushes."

The holder is provided with a long wooden handle, to which is attached a metal frame. The said frame has a pivotted clamp, which by means of a screw nut is adjusted to suit brushes of various sizes.

[Printed, 6d. Drawing.]

A.D. 1868, May 11.—N° 1538.

[illegible]NGHAM, Jacob Benjamin.—"Improvements in nail machines."

The said improvements relate to the method of holding the nail while being headed, and of shaping the shank. The ordinary machine cut nail is so griped while being headed that it is pressed out of shape, being of different form and oftener smaller immediately under the head that at a short distance below the head; while the nail made by my improved machine is griped by dies so made and operated that the symmetry of the nail is preserved, or in fact improved, the form of the shank being pyramidal, and is thus suited for boat building and other purposes.

Mechanically my invention consists in arranging the griping dies so that the nail blank is griped upon four sides with an equal pressure; and in arranging the lower die so that it may vibrate from immediately under the nail to a position under the front die, so that the nail being completed is left without support and may drop from the machine.

[Printed, 8d. Drawing.]

A.D. 1868, May 11.—N° 1539.

HOLBROOK, Amos, junior.—"A machine for sewing books."

This invention consists in combining a set of machine sewing needles or hooks, which are so connected with an operating device that they have a double motion, that is a backward and forward motion in the direction of their length, and also a reciprocating motiou around their axis, with a feeding device made as follows:—Upon a rocking shaft two metallic plates are made fast; when these plates assume the perpendicular position the "signiture" of the book is placed upon them, and as they pass back to the horizontal position a third plate of metal, which I call a "traveller," passes in between these plates and taking the signiture carries it forward to the needles, and after the needles have completed the stitch drops the signiture and returns for another one. The thread is passed between the fold of the signature by a vibrating arm.

[Printed, 8d Drawing.]

A.D. 1868, May 11.—N° 1540.

LEAKE, Richard, and BEEVERS, Joseph.—"Improvements in apparatus for the prevention of smoke "in steam boiler and other furnaces."

This invention consists of certain peculiar arrangements of furnace doors and self acting apparatus for controlling the closing of the same after they have been opened for the purpose of stoking. The furnace door is hung on centres at the top so as to close by its own weight, but this closing is regulated by a piston or ram working in an oscillating cylinder containing liquid, the rod of the piston or ram being jointed to a lever attached to the furnace door. As the door slowly closes the piston or ram rises and forces the liquid through and adjustable aperture either into a separate receiver or into the lower part of the same cylinder. n the former case the adjustable aperture is in the top of the cylinder and leads into the separate vessel or ceiver, and in the latter case it is made in the piston itself. A large valvular opening, the valve of which ens inwards to the cylinder, allows the liquid to flow freely into the cylinder from the receiver when the ston is drawn down in opening the furnace door; or if a receiver be not used, then the piston may be cked with a cup leather that allows the liquid to flow past when the piston is drawn down and closes en it rises again.

[Printed, 8d. Drawing.]

A.D. 1868, May 12.—N° 1541.

BUXTON, Sidney.—(*Provisional protection only.*)—" Improvements in writing and printing pens

That whereas pens are now formed with the split point (or writing portion) at one end only, I pr make them reversible by making the split point (or writing portion) at both ends, which may be si form and strength, or they may be dissimilar in form and strength, so that by simply reversing in the holder it is practically as serviceable as two separate pens of the present form.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 12.—N° 1542.

BRIGGS, Thomas.—(*Provisional protection only.*) — " Improvements in connecting the ends " bands for securing bales."

My invention consists in making slits in the ends of metal bands and in bending the metal at of the slits into concave and convex forms. The ends of the band when on the bale fit into ea and the space left between the concave and convex portions is filled up by a key which secures together.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 12.—N° 1543.

DEAN, George Alfred Henry.—(*A communication from Charles Marshall.*)—(*Provisional pr only.*)—" Improvements in envelopes."

This invention consists in perforating the fly flap of envelopes from side to side with a row of hol the part where the gum or seal is usually applied. These perforations may be continued along the the two sides of the lower part of the flap so as to form one figure, which may vary.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 12.—N° 1544.

LAKE, William Robert.—(*A communication from Otto Brück.*)—" Improvements in fans and " method of combining the same with pocket books and other like articles."

My invention relates to a fan of novel construction which can be worn and used by itself or b bined with other articles of personal use, as, for example, with a card case or a pocket book, or wi article which is not too bulky or too heavy to be conveniently handled. This object is obtained employment of a tubular handle, into which slides a second tube which is adapted to receive the fa folded state, the said fan being provided with draw strings so that it can be readily drawn into its and brought in a convenient shape to be carried in the pocket, or so that it can be drawn out and u ready for use.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 12.—N° 1545.

POPE, Thomas.—(*Provisional protection only.*)—" An improved curry comb."

The nature of the said invention consists chiefly in combining with the teeth of the curry com adjustable pivoted plate formed with apertures or slots to pass over the teeth and fitting closely to the The said plate lies flat upon the back or stock when the curry comb is being used, but when the same be cleansed the plate is drawn over the teeth, thereby removing the hair accumulated between the same

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 12.—N° 1546.

ARMSTEAD, Septimus Fowell.—(*Provisional protection only.*)—" An improved blow-pipe appa

The flame required is obtained from a cotton or other wick held in a tube supplied from a reser suitable fluid. The pipe for blowing is attached to the reservoir or the tube therefrom, and may be adju so that its point or outlet may be in the desired position as to the flame. To the opposite end of this p connected one end of a flexible pipe the other end of which is provided with a mouthpiece to be held i mouth of the user.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 12.—N° 1547.

VERO, Charles.—" Improvements in the manufacture of hats or coverings for the head."

This Provisional Specification describes making a compound hat by taking a felt hat of coarse materi the unfinished state and applying over it a hat of finer material either of felt or woven fabric, and ceme and blocking the two together by elastic pressure from the inside.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 12.—N° 1548.

SHINTON, Thomas.—" Improvements in forming the ends and joints of pipes."

This Provisional Specification describes making the joints or connections of pipes by having a spigot or projection at the end of one pipe with a flat ring or surface around it and a recess in the end of the next pipe with a corresponding flat ring or surface. A ring of vulcanized india rubber, lead, or other compressible material is placed over the spigot and on the flat surface around it, and the ends of the pipes are drawn close together by lugs and screw bolts and nuts or otherwise, and thus the packing ring becomes firmly compressed on all four sides and cannot escape, and so a tight joint is made.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 12.—N° 1549.

BROWN, William Donaldson.—" Improvements in reaping and mowing machines."

The feature of novelty which constitutes this invention is the arrangement and construction of mechanism for regulating the speed of the fans and rake by which the corn is supplied to and delivered from the reaper, and for regulating the position of the cutting knives to suit inequalities of the ground over which the machine passes.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 12.—N° 1550.

NUTT, Joseph Hassell.— (*Provisional protection only.*)—" An improved manufacture of straining surface " for oil and other like presses."

The strainer is composed of two iron frames hinged together so that one may close upon the other. The frames are each made of two straight bars connected together by transverse rods, which form the foundation for the woven straining surface. The strands forming this surface are interlaced with or woven into and upon the cross bars.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 13.—N° 1551.

SLATER, James.—(*Provisional protection only.*)—" An improved method of breaking up macadamised " roads and other surfaces, and apparatus or machinery therefor."

My invention consists in a novel arrangement of mechanism for breaking up maacdamised roads or any hard ground by steam or other motive power. There are a series of rods connected to cranks or levers, containing cuting tools which when put in motion gives a succession of blows on the ground to be broken up. The cuting tools are made to revolve a half circule each blow, & thereby prevents the tools from being erregularly worn on either side. The depth of the excavation can be regulated at pleasure by the man in charge of the machine.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 13.—N° 1552.

BOULTON, Samuel Bagster.—" Improvements in the means and apparatus for landing, loading, and " conveying timber in timber yards and saw mills, as also in apparatus for facilitating the sawing of such " timber."

This invention consists in arranging in timber yards and saw mills a series of conduits, troughs, shoots, channels, or pipes containing water, leading from the water side or other locality to the saw benches or places where the timber is to be stacked, into which water conduits the timber is introduced either directly from on boardship or from the water by means of shoots and travelling endless chains provided with dogs, and along which conduits it is conveyed direct to the saw benches or other locality, where it is raised out of the conduits by means of other endless chains and sloping shoots or rails.

The conduits are provided with branches and stop back plates for causing the timber to pass in one direction or the other. For raising the timber from one level to another a tank is employed communicating at top and bottom with the conduits at the upper and lower levels, so that the timber, being introduced into the tank at the lower level, rises up through the water and is caused thence to pass into the conduit at the upper level.

For facilitating the sawing of timber a self acting circular wedge revolving on a pin is employed in place of the ordinary wedges for opening out the cut in front of the circular or other saw.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, May 13.—N° 1553.

CROSSLEY, Francis William, and CROSSLEY, William John.—" Improvements in machinery for " breaking the 'boon' or refuse portion of flax and other plants, and separating it from the fibres thereof."

This invention consists, first, in passing a strick of flax or other plant between feed rollers and then between two pairs of bars, one of which has a vibrating motion to break the " boon " or stem.

Secondly. In separating the " boon " from the fibres by passing the strick after the stem is broken between two toothed rolls with horizontal bars, the teeth of one roll entering in the spaces between the teeth of the other.

Thirdly. In a pair of swivel carriers to deliver both ends of the strick alternately to the breaking bars and then to the cleaning rolls.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, May 13.—N° 1554.

BARLOW, Henry Bernoulli.—(*A communication from Carl Forster, junior.*)—" Improvements in " apparatus for preventing the incrustation and the accumulation of sediment in steam boilers."

This invention consists in placing a vessel below the level of the water in the steam boiler; this vessel is covered with a perforated or wirework lid. As the water is agitated in boiling the particles held in suspension in the water are collected in this vessel, and discharged when required through a blow off pipe.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 13.—N° 1555.

DIXON, George.—" Improvements in the manufacture of upholsterers' fringes and other trimmings."

This invention consists in spinning the design for the fringe or trimming on a cord or strand according to a previously prepared drawing in which the various spaces for the colours have been made the proper length to allow for contraction in making the cord into a bullion. The cord or strand is covered or spun in colours according to the spaces so marked, and each space of the cord representing a bullion is then taken, doubled, and spun into a bullion till all are finished.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 13.—N° 1556.

PRINCE, Alexander, and PRINCE, Alexander Charles Montague.—(*Provisional protection refused.*)—" Improvements in telegraphic communication by pneumatic means, and in the apparatus " employed therein."

According to this invention the air is contained in reservoirs, and transmitted through tubes to signalling apparatus, in such manner as to effect variations of pressure, or a series of successive pressures, jets, or pulses of air on a diaphragm, capable of acting on signalling apparatus on the principle of the aneroid barometer.

The air is compressed in reservoirs by means of force pumps, when increased pressure due to condensation is applied, and is exhausted from receivers when diminished pressure due to exhaustion or partial vacuum is applied.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 13.—N° 1557.

ALLEN, Stillman Boyd.—(*A communication from Hiram Nickerson.*)—" Improvements in rasps."

The invention consists in an improved rasp or arrangement of the teeth thereof, whereby the teeth of each range are disposed obliquely to the edges of the rasp, and so that the cutting face of each tooth shall have its obliquity arranged in a direction opposite to or about at right angles with or obliquely to that of each of the next adjacent range.

[Printed, 8*d*. Drawings.]

A.D. 1868, May 13.—N° 1558.

FARROW, Charles.—" Improvements in apparatus for cleansing bottles, jars, and casks."

This Provisional Specification describes a machine for cleansing bottles, in which the frame that supports the bottles travels to and fro on a worm (of rapid twist and few threads) cut on a horizontal bar carried by standards. The frame is actuated by a crank on an axis turned by a crank handle or otherwise; or in place of a reciprocating motion the frame may have an eccentric rotary motion by cranking the horizontal bar at both ends in reverse directions. A similar apparatus may be used for casks by the addition of a frame to receive the cask. The Specification also describes protecting the end bristles of brushes while introducing them through the neck of a bottle by means of a jointed socket with spring or similar means, so as to grip the hairs close while entering and afterwards releasing them. It also describes other modifications in the brushes used and in the way of introducing them in the bottles.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, May 13.—N° 1559.

CHAMBERLAIN, James Wing.—(*A communication from William Tyler Chamberlain.*)—"An improvement in steam engines."

The nature of the said invention consists in an improved engine, consisting not only of a cylinder open at both ends and having a partition across its middle, but of two pistons applied to a single rod, the pistons being on opposite sides of the partitions, and the said cylinder having not only a valve and steam chest and two induction ports, but two eduction ports leading laterally into the cylinder.

The nature of the invention further consists in the combination of a moveable partition and a packing and clamp screws with the cylinder (open at its ends) and the two pistons and their rod, the cylinder being provided with a valve and steam chest and induction and eduction ports.

The nature of the invention further consists in the combination of a condenser with the improved engine, made substantially as described.

[Printed, 6*d.* Drawing.]

A.D. 1868, May 13.—N° 1560.

SEFI, Michael.—(*Provisional protection only.*)—"Improvements in the method of or means for preventing the corrosion or incrustation of marine and other boilers."

This invention has for its object improvements in marine and other boilers working with surface condensers or using distilled water, so as to prevent "pitting" or oxidation.

To effect this the boiler is supplied with distilled or fresh water (salt water in no case being used), and the usual destructive action is prevented by introducing within the boiler or water space, by pumping or otherwise, a quantity of carbonic acid or other gas or gases suitable for the purpose, by which certain constituents of water dissipated by evaporation are returned thereto. The carbonic acid or other gas or gases to be introduced in the boiler are either taken from the uptake or produced in a separate vessel or vessels. Mineral or other substances capable of evolving the before mentioned gas or gases may be placed within the boiler when required.

If pumping be adopted either a separate pump may be used or the gas or gases can be driven into the boiler through suitable connections by the feed or bilge pumps or other mechanical means worked by the main engine or separately.

Arrangement is also made for cooling the pumps when too highly heated, and in some cases it may be preferred to place them within the boiler itself. Provision is also made for purifying and cooling the gases when taken as described from the uptake or other chamber or vessel previous to their being admitted within the boiler.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 13.—N° 1561.

TAYLOR, William.—"Improvements in the construction of iron and steel ships and other floating bodies, and in the mode of attaching or connecting and fixing wood planks to the sides and bottoms thereof to receive the metal sheathing, and other external and also internal fittings of iron and steel ships and other floating bodies."

The object and intention of this invention is to dispense with the necessity for making holes in the bottoms and sides of iron or steel ships or other floating bodies, or using bolts, nuts, washers, and filling pieces for securing wood planking to the sides and bottoms; thus the inside of the ship or other floating [*body*[*]] is left perfectly flush and smooth to receive the frames, stringers, intercostal keelsons, and other tie plates that are to be fayed thereto, thereby avoiding the expense of joggling and upsetting the said stringers, intercostal keelsons, and other tie plates as at present practised in the construction of iron and steel ships and other floating bodies, the whole of the rivetting by these improvements being effected from the inside of the vessel and made flush, the heads of the rivets being on the outside.

I propose to make straps of a ribbed dovetail shape, or of a double T shape in cross section. I use the aforesaid straps either longitudinally or vertically, and fit them on to the outside of the vessel over the joints of the plates thereof, and rivet them by preference at the inside of the vessel, and by fitting the ends of the planking to the sides of the dovetail or double T shape, and fitting and fixing the planks by their ends between each pair of one or the other of such said straps, the planks will thus be securely held and connected to the sides and bottoms of ships and other floating bodies without the aid of fastenings passed through the bottom and sides of the ship or other floating body.

And in constructing new iron and steel ships and other floating bodies intended to receive wood sheathing I propose to fix some or if desirable all of the ribs diagonally outside of the vessel, and sheath with wood and metal as above described, and when the frames are affixed to the outside of the vessel I propose to fix the stringers, intercostal keelsons, and other tie plates over the joints of the sheathing plates at the inside of the ship or other floating body so as to form a substitute for the horizontal straps at present employed in the construction of iron and steel ships and other floating bodies.

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[*] The word "body" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 13.—Nº 1562.

BALDWIN, William.—(*Provisional protection only*.)—" Improvements in looms for weaving."

This invention relates to the employment of levers worked by the " crank " of the crank shaft (or tappets thereon), such levers being connected with the "weight-ropes" for "letting of" the yarn without the weights and levers heretofore employed for that purpose.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 13.—Nº 1563.

MULLORD, Henry Bartholomew, and **MULLORD**, Alexander.—(*Provisional protection only*.)—" Improved materials for the manufacture or ornamentation of bonnets and other articles."

The material is composed of a silk or satin facing glued on a backing of one or more thicknesses of paper or parchment to give it stiffness and durability, or instead of a silk or satin facing we may employ for the same purpose muslin, velvet, leather, straw, or wood veneer. The material so prepared is embossed in designs according to the purpose desired by means of a die, the perforations being produced by the aid of glass paper. These improved materials we apply for ornamenting bonnets, book covers, valentines, and for the manufacture of collars, cuffs, and such like articles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 13.—Nº 1564.

ILES, Charles.—" Improvements in the manufacture and ornamenting of thimbles."

One part of this invention consists in making thimbles and the linings of thimbles from soft or ductile metal at one operation by means of dies and pressure, the thimbles when necessary being strengthened by a harder metal cap.

Another part consists in making thimbles and the linings of thimbles from short pieces of tubes fashioned by dies and pressure into the required taper form.

Another part consists in making thimbles from cast iron or annealed cast iron, cast by preference in chilled moulds.

Another part consists in making thimbles of porcelain or other vitreous material, or of koalin (clay), with or without metal rims to strengthen them.

Another part consists in ornamenting thimbles by applying thereto ornamented strips or bands of paper or flexible material, or by applying a design or pattern by means of an ornamented roller charged with colour, or by first impressing or indenting the design or pattern, and afterwards filling it in with colour.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 13.—Nº 1565.

CLUNES, Robert Mortimer, and **DAVIS**, Frederick William.—(*Provisional protection only*.)—" Improvements in harrows."

According to this invention, the beams are made each of one piece or bar of iron, bent diagonally, and forming at their junctions oval recesses or holes into which the tines are inserted and secured by bolts and screws; thus the harrow is as strong as if made in a solid piece; the ends of the combined beams are secured by long bolts and wrought iron struts. The heads of the tines may come flush with the surface of the beams, or they may have heads to lap over one or both beams so as to clip the same. The beams may be so bent as to form flattened surfaces, within which points of junction the tines are bolted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 13.—Nº 1566.

NEWTON, William Edward.—(*A communication from A. H. Jacobs.*)—" Improvements in braces or " suspenders."

The brace consists of a single piece of webbing joined at the ends by a buckle and provided with two button or strap loops for attachment to the trousers.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 13.—Nº 1567.

DIXON, Frederick.—(*Provisional protection only*.) — " Improvements in the construction of packing " cases or boxes for holding bottles containing liquids."

Binned cases for holding bottles of wine are lined with soft packing to prevent the bottles from breaking. The necks are inserted into holes made in a sheet of fabric stretched over a frame or secured to the sides of the case.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 13.—N° 1568.

NEWTON, William Edward.—(*A communication from James Finlay.*)—" Improvements in axles and " axle boxes."

The axle box is constructed to form a lubricating receptacle or chamber by means of rings arranged within either box. The axle also has its journal fitted with rings or collars.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 13.—N° 1569.

TASKER, William, the younger.—" Improvements in steam engines."

The object of this invention is to regulate the supply of steam (or vapor) passing into the cylinder or cylinders of steam engines by altering the travel of the valve or valves, which will also enable the steam to be given to or cut off from the engine at any required period during the stroke.

In carrying out this invention two or more eccentrics are employed, placed within or upon each other, so that they can be moved backwards or forwards separately or at the same time, making the sheave round which the eccentric strap works more or less eccentric, and thus regulating the travel of the valve or valves, and consequently the admission of the steam.

The eccentrics may be fastened in any adjusted position to an ordinary disc or reversing plate by bolts, screws, or any other convenient means.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 14.—N° 1570.

WILSON, Jacob William.—(*Provisional protection refused.*)—" Improved spring stuffing."

This invention is double rows of springs, arranged exactly over each other, with canvas or any other material between.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 14.—N° 1571.

MARSDEN, Harry, and BLAMIRES, Thomas Howard.—(*Provisional protection only.*)—" Improvements in means or apparatus employed in the process of manufacturing wadding or felted fabrics."

The novelty consists in,—

Combining and arranging apparatus for which Letters Patent were granted to the said H. Marsden, bearing date the 25th day of April 1864, No. 1039, with other apparatus for giving continuous motion to the creeper or endless apron employed therewith, so as to adapt the said apparatus for the preparation of cotton, wool, or other fibrous substances for the manufacture of wadding or for felted fabrics.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 14.—N° 1572.

GADD, William, and MOORE, John.—" Improvements in looms for weaving."

This invention has for its object the actuation of the slay and the picking motions by one main shaft instead of by a crank shaft and a tappit shaft as are usually employed. The main shaft revolves at a speed suitable for the tappits, and has the tappits mounted thereupon to give motion to the picking-shafts. The slay is actuated by two double cams, the said cams being suitably formed to give two strokes to the slay during one revolution of the main shaft. Each of the cams is formed with two faces, the outer working against a bowl on the slay, and the inner against a bowl carried by a drag link, or a snail cam or any other suitable form of cam may be employed.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 14.—N° 1573.

ASHFORD, John, and COLLINS, Walter Henry.—(*Provisional protection only.*)—" Improvements in " dress ornaments."

This invention consists in constructing dress ornaments, to be fastened to the collar studs or other studs of the dress, hollow or of a box form. In the back plate of the hollow body of the ornament is a circular hole, and opening into which hole is a vertical slot. The stem of the collar stud is made square to fit the vertical slot described. In fastening the hollow ornament to the collar stud the circular hole is passed on to the head of the stud, and the ornament is then depressed so as to engage its slot with the stem of the stud.

For greater securty the ornament is fixed to the stud either by a jointed plate or lever being made to engage with the stem of the stud, or by a spring made to cross the vertical slot in the back plate and prevent the withdrawal of the ornament from the stud except by the application of some force.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 14.—N° 1574.

DE SAINTE-MARIE, GEORGES.—(*Provisional protection only.*)—" An improved mode of coloring or " ornamenting capsules, tubes, and metallic foil."

Capsules, tubes, and foil are colored with fatty or semi-fatty varnishes or inks applied by a roller and then dried in an oven.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 14.—N° 1575.

KAY, THOMAS BISPHAM.—" Certain improvements in carding engines to be employed for carding cotton " and other fibrous substances."

The novelty of the invention consists in the novel employment, use, and application of a peculiar form of surface for such purpose, which is [*like the "frustrum of a cone," that is a surface which is**] convex or circular from right to left, and also diminishes in diameter and is inclined as part of a cone in the direction from back to front, whereby the "setting" or adjustment of the "top cards" or "flats" to the periphery of the cylinder of a carding engine may be collectively and simultaneously effected.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 14.—N° 1576.

KÖNIG, OTTO.—(*A communication from François Vité.*)—(*Provisional protection only.*)—" A new or " improved album or case for exhibiting a series of photographic or other pictures, designs, or drawings."

This invention consists in the employment of a frame or case by preference made in the shape of an ordinary album and divided into as many compartments as it is desired there shall be pictures exposed to view at once, for example, two. The pictures are laid in frames on the top of one another, and by pulling an india rubber cord a slide is advanced and the picture at the bottom of one compartment is caused to travel to the bottom of the other compartment, and the picture at the top of one compartment to the top of the other compartment; at each pull of the cord a picture is advanced and all the pictures contained in the compartments are thus successively exposed to view.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 14.—N° 1577.

DRIVER, JEREMIAH.—" Improvements in effecting the consumption of smoke and economy of fuel in " steam boiler and other furnaces."

The invention relates to causing a fan or blower, whilst supplying fresh air to the ash pit or chamber under the fire bars for feeding the fire, to draw off smoke and products of combustion with air heated by passing through the fire, to be again supplied to the fire.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 14.—N° 1578.

DEWAR, JAMES.—" Improvements in preserving certain vegetable substances for use as food for animals."

Preserving the substances known as draff and dreg in a condition suitable for food of animals by the application of sulphurous acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 14.—N° 1579.

PIPER, JOHN EDWIN.—" A new or improved oil for lubricating machinery."

This invention consists in the admixture of Italian, petro and castor oils, in combination with concentrated anticorrosive compound termed "the patent machine oil.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 14.—N° 1580.

NEWTON, WILLIAM EDWARD.—(*A communication from William Berry Lodge and Hiram Plater.*)— " Improvements in the manufacture of felt hats."

The wool felt of which hats are made has fur dust or short fur incorporated with it after the bat or body is formed or during the process of felting.

[Printed, 4*d*. No Drawings.]

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* The words " like the 'frustrum of a cone,' that is a surface which is," are found [in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

A.D. 1868, May 14.—N° 1581.

WILLIAM EDWARD.—(*A communication from Kellogg Hubbard Loomis.*)—" Improvements in
ines."
l conical oscillating hollow valves are fitted in conical hollow perforated shells which are secured
chest (and exhaust) of the engine.

d. Drawing.]

A.D. 1868, May 14.—N° 1582.

ENTINE GRÆME.—" Improvements in locomotive engines and tenders."
ation relates to improvements in locomotive engines and tenders intended to be used on railways
h a central rail for facilitating the traffic over steep gradients and sharp curves. The improve-
st, 1st, in a novel arrangement for driving the horizontal wheels which are used to grip the
and retain the engine on the track when passing round dangerous curves, and also to increase
the engine upon the track; and, 2ndly, in a mode of coupling two engines together through
ation of a tender when increased traction power is required, and enabling one engine driver to
h engines.

2s. 8d. Drawings.]

A.D. 1868, May 14.—N° 1583.

WILLIAM ARMITAGE, and JONES, RICHARD LIONEL.—" An improved hand signal lamp."
ovement consists of mounting slides of coloured glass or other suitable material upon levers
ody of the lamp in such a way that they can be moved at will by one hand, and the colour of
reby changed.

0d. Drawing.]

A.D. 1868, May 14.—N° 1584.

ATHANIEL.—(*A communication from Charles Edward Basevi.*)—" Improvements in projectiles."
isional Specification describes constructing elongated or conical projectiles to be thrown from
guns by forming them with spiral or inclined passages through them with valves or covers to
s generated by the explosion to pass and so rotate the projectile, and on leaving the gun to close
ent the air from checking the rotation by passing in the reverse direction.

0d. Drawing.]

A.D. 1868, May 14.—N° 1585.

TH, EDWARD.—(*Provisional protection only.*)—" Improvements in the construction of telescopic
use in machines for drying and tentering fabrics and for other purposes."
visional Specification describes making such rollers of bars of T iron, the flanges of the bars
circumference of the rollers. The web of each bar is cut away for a short space at each end, and
anked downwards and passed through holes formed in the discs which carry the bars, and fixed
ap screws or otherwise.

d. No Drawings.]

A.D. 1868, May 14.—N° 1586.

WILLIAM.—" Improvements in the processes of cutting and dressing millstones, and in
to be employed for such purpose."
isional Specification describes an apparatus for cutting and dressing millstones by cutters of
other hard stone which have a traversing to and fro motion given to them, also deepening the
millstones by means of steel pickers.

0d. Drawing.]

A.D. 1868, May 14.—N° 1587.

JAMES GRAHAM.—(*Provisional protection only.*)—" Improvements in dressing stone, and in
nery or apparatus employed therefor."
re of novelty which constitutes this invention is the employment of a horizontal slide upon which
vels carrying a cross-slide, to which the cutting mechanism is attached. A lever from the cross-
ed so as to retain the tools, and the cutting is effected by giving the requisite motion to this

d. No Drawings.]

A.D. 1868, May 14.—N° 1588.

LAKE, William Robert.—(*A communication from William Wirt Secombe.*)—(*Provisional protection only.*)—" An improved apparatus for marking or directing boxes and parcels, and for other like purposes."

This invention consists in a revolving type wheel, which has its bearings in a forked handle in close proximity to an ink roller, being held in contact therewith by suitable springs in such a manner that by rolling the said type wheel over the cover of a box or other surface to be marked the types in sweeping past the ink roller take up a supply of ink, and in coming in contact with the surface to be marked the ink taken up by the types is transferred to said surface, and the operation of marking is performed with great dispatch and neatness. The said invention consists also in an ink roller composed of a hollow cylindrical reservoir perforated with small holes and surrounded by a strip of cloth or other absorbent material in combination with a type wheel in such a manner that a large number of impressions can be made with the type wheel without the necessity of recharging the ink roller. The said invention consists further in the arrangement of raised flanges on the surface of the type wheel in such a manner that the said wheel on being rolled over the surface to be marked is kept from tipping over sideways and a neat and perfect impression is obtained. The said invention consists also in the arrangement of a stop in combination with the type wheel and ink roller in such a manner that the correct starting point of the type wheel is determined, and it consists finally in the arrangement of a spring to carry the type wheel back to its starting point as soon as the same is lifted from the surface to be marked.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 15.—N° 1589.

GATHERCOLE, Thomas James, and COMYN, Thomas Ross.—(*Provisional protection only.*)—" Improvements in the construction of frames and furniture for umbrellas, sun shades, parasols, and other such like articles."

The chief features of novelty in the invention is the application of a stay connected to the rib of the umbrella, sun shade, or parasol, and also to the ordinary stretcher by joints, which stay is constructed in two or more parts fastened together by joints, to allow of its folding when the umbrella, sun shade, or parasol is closed; and also the manner in which the ribs and stretchers are connected to the running and fixed sockets and end of stretchers and stays to rib by forming the end of the rib stretcher and stay as a hook or eye, which work in holes or hooks in the flange of the sockets, projecting pieces, hooks, or eyes on the ribs.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 15.—N° 1590.

CROFTS, Holmes Cheney.—" Improvements in the manufacture of bricks or building blocks."

To form these bricks I take three parts by weight of Portland cement, and one part by weight of grey stone lime.

The lime is slaked with a solution of sulphate of iron of the strength of about one pound to the gallon. This mixture being made tolerably stiff, is laid on the sides of the mould about a quarter of an inch in thickness, and upon the face of the brick from one-half to one inch in thickness. The inside of the mould is then filled with concrete formed of grey stone lime and gravel, broken stones, or other hard and suitable material. When so made they dry of themselves in a short time sufficient to be turned out of the mould. The further drying is obtained by placing the blocks in stacks in the open air or under cover.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 15.—N° 1591.

JOHNSON, John Henry.—(*A communication from Francois Louis Sabrout.*)—" Improvements in the manufacture of hollow bricks or blocks to be used for the floors, ceilings, and other parts of buildings, and in apparatus for moulding or manufacturing the same."

This invention relates to a substitute for ordinary lath and plaster, and consists of improved modes of moulding hollow or cellular pannelled blocks from plaster, cement, or other plastic material, such blocks being at the same time closed hermetically on all sides. These hermetically closed hollow or cellular blocks are intended to be let in between the beams, joists, girders, or uprights of buildings, and secured therein by plaster or cement. Special mould boxes provided with moveable or stationary cores are used in moulding the aforesaid blocks. When the cores are removed after the blocks are moulded, then the open cavities left in the blocks are closed by the aid of a second mould of caoutchouc or other elastic or flexible material into which the plastic material is poured and allowed to expand freely if required. In some cases the cores are llow and are allowed to remain inside the blocks, thus dispensing with the operation of closing the s.

ted, 8*d*. Drawing.]

A.D. 1868, May 15.—Nº 1592.

SON, **John Henry**. — (*A communication from Joseph François Antoine Aubriot Roussaux and Vincent.*) — (*Provisional protection only.*) — "Improvements in frames or holders for containing graphs, miniatures, hair work, pictures or engravings and other like articles, and in the apparatus or s employed in their manufacture."

invention consists in the application of moulded glass or porcelain to the manufacture of picture f all kinds or holders for hair work, miniatures, or photographs.

lass or porcelain may be moulded in a metal mould, the two halves of which are hinged together and by any suitable fastening. A piston or ram inserted into the pouring hole of the mould, when rves to compress or consolidate the casting; plain or colored glass may be used and may be more rnamented according to the taste of the manufacturer.

ted, 4*d*. No Drawings.]

A.D. 1868, May 15.—Nº 1593.

S, **James**.—(*Provisional protection only.*)—"The application of a method or methods of connecting sconnecting the bellows, or the bellows and windchest, with the notes or reeds and keyboard in n musical instruments."

make a small manual or keyboard of two and a half, or more or less, octaves of keys with pallets l, and a row of reeds to correspond with the keys, and an airtight chamber into which the connection made.

hen make a bellows and windchest which are fitted in a box in such a manner that they can be n the floor or elsewhere, and can be worked or actuated by the foot.

then make a hole in the end of the box into the windchest (No. 2), and also a similar hole in the end ir chamber of manual (No. 1).

now make the connection by means of a tube of vulcanized india rubber or other tubes, in each end h is fixed a short brass tube, made to fit the holes (3) in the manual (1) and the windchest (2).

ted, 4*d*. No Drawings.]

A.D. 1868, May 15.—Nº 1594.

, **Frederick**. — (*Provisional protection only.*) — "Improvements in the construction of bevel ng."

nvention consists in casting bevel wheels with two sets of teeth placed back to back, so that two te bevel wheels of the same or different pitch, and of the same or different angle, may be cast together, y labour is economised and the speeds of shafting or machinery easily varied.

nted, 4*d*. No Drawings.]

A.D. 1868, May 15.—Nº 1595.

LETON, **Thomas**. — (*Provisional protection only.*)—"Improvements in looms for weaving, and in tles used therein."

first part of this invention relates to loose reed looms, and consists in various improved arrangements hanism for making the reed fast for beating up the weft and loose when the shuttle is lodged in d.

second part consists in various improvements connected with shuttles. A square or oblong piece of is used for supporting the shuttle tongue, and two pins are used for fixing it to the shuttle; an nal pin is also placed in the shuttle for holding the tube on which the cop is spun or wound, and the tongue is made of a hollow spiral form from sheet metal.

nted, 4*d*. No Drawings.]

A.D. 1868, May 15.—Nº 1596.

BERS, **Samson**, and BROADHEAD, **Charles**.—(*Provisional protection only.*)—"Improved means reventing the radiation of heat from steam pipes, cylinders, and boilers."

invention consists in the application of a certain non-conducting covering to such pipes, cylinders, lers for the purpose of preventing the loss of heat by radiation.

first cover the steam pipe, cylinder, or boiler with coiled hay or straw bands steeped in the cement, and we then plaster these over with a cement or composition made of Gannister oak bark, cows or other hair, and coal or other tar well mixed and ground up together to the consistency of plaster or cement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 15.—N° 1597.

PELARD, Auguste.—(*Provisional protection only.*)—" Improved portable hydrotherapic apparatus."

The object of this invention is the construction of a portable apparatus combining in one an ordinary perpendicular shower bath, a single jet bath, and one in which the water projected from a ring converges towards the centre of the apparatus occupied by the bather.

The apparatus is composed of a basin or water reservoir at its lower part, of a high pressure pump which raises the water into a sphere or air ball, upheld by two rods socketed in the water basin, this sphere having a union pipe to which may be attached at pleasure a rose for administering a shower bath in small rain, or an india rubber tube to administer from a "lance" or single jet, a stopper being provided to shut off the water from the rose and the "lance" when desired. The two rods upholding the sphere also assist in supporting a ring soldered to it and pierced with an infinity of small holes so arranged that the jets converge to the centre of the apparatus and therefore all around the body of the bather. Cocks and tubes are provided for shutting off water from the various parts and for emptying the basin, also a curtain to keep the water from splashing over the apartment; and all the parts are so put together that the apparatus may be taken to pieces with great facility.

[Printed, 4*d*, No Drawings.]

A.D. 1868, May 15.—N° 1598.

NEWTON, Alfred Vincent.—(*A communication from Joshua Mason.*)—" Improvements in liquid " meters."

This invention relates to that description of liquid meters in which a reciprocating piston is used within a measuring cylinder and made to operate a primary valve that serves to control the passage of the liquid to operate a secondary valve for the purpose of reversing the action of the piston within the measuring cylinder or chamber.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 15.—N° 1599.

ROBEY, James.—(*Provisional protection only.*)—" Improvements in furnaces for consuming smoke."

This Provisional Specification describes applying steam jets below the fire bars, the nozzles or jets are made to rise up between the bars in some cases, also the pipes carrying the nozzles have a to and fro motion given to them.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 15.—N° 1600.

SMITH, William, and SMITH, George Browne.—" Improvements in dry and wet gas meters."

The first part of this invention consists in forming the bottom rim to which one side of the diaphragm is attached longer than the rim carrying the disc, so that the disc may pass through the larger rim.

The second part consists in making the registering pin to turn on the bar instead of sliding thereon; the pin is tapped, and it is only necessary to know the value of a thread to ascertain how many revolutions the pin must make to render the meter perfect.

The third part consists of an eccentric valve for dry meters; a rod is attached to one end or side of the valve cover passing through a loop on the valve plate. As the valve rotates it works eccentrically over the ports by reason of the rod on the end being loose in the loop.

The fourth part consists in supplying water to wet meters by means of hollow buckets or arms worked through the rotation of the measuring drum, and in such manner that at each rotation a small quantity of water is carried up into the measuring part of the meter.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 15.—N° 1601.

CLARK, Alexander Melville.—(*A communication from Mr. Legrand.*)—" Improvements in the permanent way of railways."

The invention relates to various modes of fixing rails to metal sleepers of different forms.

The first mode of fixing consists of cramps received in mortises on either side of the rail in the top of the sleeper, a sole plate is then inserted through mortises in the cramps while the metal is hot and the ends rivetted to the cramps; the rail is next placed and fixed by a wood quoin. The sole plate may either be placed above or below the top of the sleeper, while the lower ends of the cramps may have screw threads and

s. I also fix the rails by means of angle irons rivetted to the sleeper, on which the rail may rest if
ired.

also fix the rail by means of screw bolts inserted from below, the nut of which bears direct on the rail
t and is turned a quarter round to admit of the latter being inserted in place. I further use wedges
ing in the sleeper mortises for regulating the distance between the rails. Or a projection on the screw
t may answer the same purpose.

arious modifications of the above are also shown in the drawings.

further fix a rail to a ribbed iron sleeper by sawing through the rib and bending it at right angles to
n a support for the rail, which is introduced in the opening. Or the ends of the sleeper may be bent up
orm a means of fixing the rails.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, May 15.—N° 1602.

KE, William Robert.—(*A communication from Charles Augustus Seeley, Charles James Eames, William
ert Cotton Clark, and Mary Louisa Booth.*) — "An improved mode of embalming or preserving dead
odies."

The nature of my invention consists in the impregnation of dead bodies with carbolic acid or other
uivalent or antiseptic liquid. I apply the antiseptic liquid to the surface of the body, and also when
emed advisable inject it into the stomach and intestinal canal, into the arteries and veins, and into the
ll.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 15.—N° 1603.

ICE, James.—" Improvements in testing the durability and strength of rails, and for ascertaining the
fficiency of the various parts, forms, and arrangements of permanent way of railways, and in the machinery
r apparatus employed therefor."

This invention consists in testing the strength and durability of permanent way by laying down a circular
lway of the construction to be tested, and placing in the centre of such railway a testing machine
nsisting of a vertical shaft carrying a number of radii or horizontal arms, which with the shaft are caused
revolve by any suitable prime mover. On the ends of these arms are rollers, flanged or otherwise, each
eighing say from five tons upwards, and rolling upon the rails at speeds varying say from 20 to 40 miles
r hour, according to the severity of the test required. By this means permanent way may be subjected to
e same disturbing forces or tests that it would have to submit to when in actual use, in lieu of merely
ndergoing the ordinary and inefficient tests of dead and falling weights.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 16.—N° 1604.

ONGUE, John Garrett. — (*A communication from Henry Graham Thompson.*) — (*Provisional protection
ly.*)—" Improvements in apparatus for sewing or stitching together the numbers or separate parts of a
volume in the operation of bookbinding."

This Provisional Specification relates to improvements in apparatus of the character described in the
rovisional Specification of an invention for which Letters Patent have been granted to the said John Garrett
ongue, dated January 10th, 1868, No. 98.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 16.—N° 1605.

ULE, William, the younger. — (*Provisional protection only.*) — " An improved machine or apparatus
for dressing metallic ores."

1st. A revolving bed of wood for the dressing of metallic ores, having a declination towards the centre,
nd the upper surface of which has been purposely made rough; and,

2nd. The manner of purifying metallic ores by washing and cleansing them on such revolving table.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 16.—N° 1606.

ING, Henry James Hogg, AUCHINVOLE, John, and PATRICK, Alexander.—" Improvements
in gauges or apparatus for ascertaining pressure."

This invention relates to various modifications of gauges, and in one a tube of glass or other suitable
aterial is bent so as to present a series of vertical lengths united alternately at the top and bottom and

contains mercury and a lighter liquid, the latter being by preference a mixture of glycerine and water. These liquids are disposed so that when there is no pressure acting the mercury occupies the lower parts of the several lengths, and the other liquid the upper parts. When fluid pressure acts the mercury rises up, the outer length of each pair causing the contents of the outer lengths to preponderate over those of the inner lengths; and it is the sum of the several amounts of preponderance that measures or corresponds to the pressure applied.

In a modification of barometer a closed downward bend is added to the top of the ordinary barometer tube, and is of larger area than the bottom bend. The mercury is made to occupy part of the upper bend, in addition to filling the main length and partly filling the bottom length, and in consequence of the differential areas an increased length or range of scale is obtained.

In another modification a moving cylinder is provided for the pressure to act in, and works with cupped leathers on a fixed trunk or rod bored to fit a rod or plunger fixed to the bottom of the moving cylinder. The bore of the trunk can be put in communication with the atmosphere or with the inside of the cylinder at pleasure by means of screw plugs or otherwise.

Another improvement consists in combining two opposite connected diaphragms of different areas, whe the pressure acting between them will cause a movement corresponding to the difference only of the areas.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, May 16.—N° 1607.

BRIGGS, Timothy.—" Machinery for communicating and signalling between passengers, guards, and " drivers of railway trains."

The invention consists in the employment of a lever placed inside or outside the carriage and capable of acting on another but smaller lever, forming a cover to a box attached to the side of the carriage and containing a spiral spring and flag. By moving the lever the box lid is thrown open and at the same time the flag is unfolded and exposed to view. The large lever pulls a rope by which the guard can when necessary sound a whistle on the engine; thus one movement of the lever unfuls the flag and sounds the whistle on the engine.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 16.—N° 1608.

MURRAY, Andrew John.—" Improvements in reaping machines."

The first improvement consists in guiding the machine by altering the angle of the pole of the carriage. 2nd, the use of a lever adjustment to regulate the position of the cutters as regards the ground by acting on the inner end of the pole.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, May 16.—N° 1609.

RAYNER, Robert. — (*A communication from Sarah Elizabeth Saul.*) — (*Provisional protection only.*)— " Improvements in apparatus employed for cooking, boiling, melting, and evaporating purposes."

The cooking or other vessels are covered in with a dome or cup to collect the vapors which are conducted by a pipe down into the fire and are there consumed, or if the vapors are metallic or soluble in water they may be conducted into a condenser and thus prevented from escaping into the atmosphere.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 16.—N° 1610.

CLARK, Alexander Melville.—(*A communication from Louis Désiré Defienne and Paul Hyacinthe Girardin.*)—" Improvements in lamps for burning mineral oils and essences."

These lamps are provided with a burner of circular form composed of tubes of small diameter placed round the inside of a cylinder. Each tube carries a round wick, the lower end of which is in contact with a central wick immersed in the oil. The wicks are attached to a sliding plate perforated to receive the wick tubes, and provided with a rack and pinion serving to adjust the position of the wicks. The ends of the wicks are cleaned by the aid of a cap with perforations corresponding to the wicks to be placed on the end of the cylinder containing the wick tubes for removing the burnt ends of the wicks. Instead of a disc being used to carry the wicks I may employ a tube provided with tongues for raising and lowering said wicks.

According to another mode of raising the wicks I place them in tubes sliding in those before mentioned by the aid of a rack and pinion, the wicks are connected to the sliding tubes by tongues so as to participate in their up and down motion.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, May 16.—Nº 1611.

ADAMS, JAMES ALISON.—" Improvements in cooking ranges."

The feature of novelty which constitutes this invention is the forming of the side plates of the fire grate near to the oven with one or more openings in it, through which ignited fuel from the fire may pass and rest upon a second set of fire bars of special construction, these fire bars being situated in a flue or space which surrounds the oven.

[Printed, 8d. Drawing.]

A.D. 1868, May 16.—Nº 1612.

GOLDEN, CHARLES.—" Improvements in breech loading guns."

The novelty of this invention consists, in the first place, in an improved shape or pattern of thumb lever for unlocking the breech, the thumb part of such lever forming a part of the ordinary guard when in position. The upper end of this lever is made in the shape of a human foot, which fits into a recess formed through the bolt used to unlock the breech. In the second place, a slot is cut through the solid bar of the fore end of the body in order to allow a spring to be passed through it, such spring pressing upon a projection of the lever before named, and being kept in position by means of a pin or screw passed through the upper side of the solid bar and so arranged as to be capable of easy removal in the event of a spring breaking.

[Printed, 8d. Drawing.]

A.D. 1868, May 16.—Nº 1613.

ALLDAY, WILLIAM.—" Improvements in forge and other bellows."

The object of this invention is to prevent the loss of space in packing bellows. In constructing bellows according to this invention a tube of the length of the bellows pipe is fixed inside the bellows, being screwed to the cope or front of the bellows. This tube has at each end an internal screwed collar. The large end of the bellows pipe is provided with a collar screwed externally, by engaging the screw on the pipe with the front collar in the tube the said pipe is fixed in position for use. When it is wished to pack the bellows the bellows pipe is unscrewed from the front collar, pushed forward in the tube, and screwed into the back collar of the said tube. The said pipe is thereby fixed inside the bellows. Instead of the tube described the front collar may be fixed in the [*front of the**] bellows, and the back collar supported in any convenient way inside the body of the bellows.

[Printed, 1s. Drawings.]

A.D. 1868, May 16.—Nº 1614.

PARKES, ALEXANDER.—" Improvements in the manufacture of parkesine or compounds of pyroxylin to " render such materials more suitable for making billiard balls and for other purposes."

According to this Provisional Specification starch or starchy matter, flour or ground and bleached cotton is mixed with dissolved pyroxylin.

Articles of parkesine are seasoned by soaking in liquids which will dissolve out the solvent without affecting the pyroxylin. The curing liquid which has penetrated the material is afterwards recovered by placing the articles in a receiver which is exhausted and the vapours are condensed.

[Printed, 4d. No Drawings.]

A.D. 1868, May 16.—Nº 1615.

PRICE, GEORGE.—" Improvements in pianos and other keyed musical instruments."

According to this Provisional Specification the finger keys of pianos and other similar musical instruments are warmed by means of a heated vessel or vessels placed beneath them.

[Printed, 10d. Drawing.]

A.D. 1868, May 16.—Nº 1616.

SMITH, GEORGE.—(*Provisional protection only.*)—" Improvements in pressing and finishing hollowed or " chambered bricks and blocks, either of plastic materials or powdered clay dust, for building purposes, and " in the apparatus employed therefor."

This invention consists in pressing or finishing perforated or hollow bricks, blocks, and such like materials used for building purposes, having holes, perforations, chambers, or perpendicular recesses introduced into them during making; and also for making, pressing, or finishing out of solid blocks and bricks (partially [illegible]ied or otherwise) hollows, perforations, perpendicular recesses, or chambers during the pressing or finishing such bricks and blocks, whether the said perforations, recesses, chambers, or hollows go through the said bricks and blocks or not.

[Printed, 4d. No Drawings.]

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* The words "front of the" are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

A.D. 1868, May 16.—N° 1617.

GEDGE, William Edward.—(*A communication from Paul Clérin.*)—" An improved process for e
" or removing wool and hair from hides or skins."

The improved process the subject of this invention is based on the use of hydrosulphates of so
preparation used consists of about 13 lbs. of hydrosulphate of soda and of from 2½ to 3½ lbs. of li
in a bucket of water for every 100 hides; these proportions are not absolute, but will vary with the c
of the hides to be treated.

Or the hydrosulphate of soda is rendered liquid without the addition of lime white, and when it i
on the hides they are sprinkled with slacked and pulverized lime, which, while effecting the extracti
wool, does not moisten the hide.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 16.—N° 1618.

LAKE, William Robert.—(*A communication from Alexander Lyman Holley and John B. P*
" Improvements in apparatus employed in the manufacture of iron and steel."

My improvements relate to the means for making a sound joint between a removable bottom and t
of the body of the converter, and to arranging openings through which access can be had to the b
the converter when the same is hot. I employ in combination with a converter a moulded stopper
I also combine a shield with a converter for protecting the workmen while they repair the bottom
an adjustable stopper in combination with the converter and a mould, and I employ a cutter moving
a centre to form a smooth and regular aperture in the lining to receive the mould. A tuyere
employed in combination with a converter bottom when the latter is so constructed as to be capable
introduced into the converter through the tuyere box, and an aperture in the converter is so loca
respect to the mouth and to the bottom of the converter that the bottom can be worked upon thro
said aperture which can be stopped through the mouth of the converter.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, May 16.—N° 1619.

HAMILTON, Milton Alexander.—" An improved churn."

My invention relates to churns in which the butter is produced by the action of a reciprocating pi
plunger upon the milk or cream which is contained within a cylindrical or other suitable shaped vessel.
said invention consists chiefly in constructing the piston or plunger with two or more perforated di
with shallow saucer-shaped pieces, or with rings, or with a hollow perforated conical or bell-shaped pi
number of such pieces which form chambers, whereby the air is collected and forced into and throug
milk or cream during the process of churning.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 18.—N° 1620.

ANDERSON, James Whitelaw. — (*Provisional protection only.*) — " Improvements in 'temples
" looms, and in the cases containing them."

The feature of novelty which constitutes this invention is the employment of two temples so sit
in their "cases" that the use of a bridge and therefore the friction and injury to the cloth by rubbing
such bridges is entirely avoided.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 18.—N° 1621.

BILLINGTON, Edward, and JOLLEY, William.—(*Partly a communication from Bernard A*
Schaeffer and Christian Frederick Budenburg.)—(*Provisional protection only.*)—" Improvements in app
" for conveying and regulating the pressure of steam passing through pipes or other vessels and t
" off condensed water from the same."

The features of novelty in this invention consist in the use and application of a series of double corru
discs forming in conjunction with a double valve a sensitive arrangement for with-drawing steam at a re
pressure from a pipe or other vessel containing steam at a higher pressure, and in a chamber balanced
a lever, fitted internally with valves and communicating with such steam pipe or other vessel for withdra
condensed water from the same.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 18.—N° 1622.

MANWARING, William.—"Improvements in lawn mowing machines."

The adaptation to ordinary lawn mowing machines of an apparatus enabling such machines to trim or clip the edges of grass plats, lawns, and flower borders, such apparatus consisting in the use of a rotary clipping knife revolving against a fixed or quasi fixed blade.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 18.—N° 1623.

WATSON, George.—"Improvements in apparatus for raising and lowering weights."

This invention consists of an improved pulley block, the pulley sheave (or sheaves) of which is attached to a worm wheel acted on by a worm or screw, the spindle of which is worked by chain wheel and endless chain, lever handles, band, rope, or otherwise.

This combination of worm wheel and screw with a pulley sheave or sheaves is also applied to cranes, hoists, travelers, and other means for raising weights.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 18.—N° 1624.

NEEDHAM, William, and KITE, James.—(*Provisional protection only.*)—"Improvements in preparing "filtering surfaces for the depuration of fluids."

This invention is based upon the application of neutral substances on filtering surfaces by the agency of the fluid under treatment operating under pressure.

A certain quantity of a neutral substance is mixed intimately with several gallons of the fluid to be depurated and brightened. This preparation is then forced into the cloths or other filtering medium of a filtering press in the ordinary manner, and the fluid under the pressure forms successive deposits of the neutral substance upon the filtering medium until this latter becomes of an equal and suitable density, which is ascertained by the condition of the liquor issuing from the press. The process of depuration is then carried on [*continuously**] for an almost indefinite period without the addition of more neutral substance.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 18.—N° 1625.

GOLDSTEIN, Louis.—(*Provisional protection only.*)—"Improvements in umbrella and parasol cloths."

The novelty consists in,—

Having such cloths or fabrics produced with a border of silk, cotton, or other fibrous substance of a distinctly different colour to the body of the piece or fabric by or in the process of dyeing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 18.—N° 1626.

SPENCER, John Frederick.—"Improvements in working the valves of steam and other engines."

First, working the steam valves of Corliss or similar engines by two separate discs, arms, or segments working concentrically to a vibrating valve rod, such discs, arms, or segments being connected together by escapement gear.

Secondly, closing Corliss double beat or other similar steam valves by the piston in a vacuum cylinder, the vacuum being formed by the same motion that opens the steam valve.

[Printed, 1*s*. Drawings.]

A.D. 1868, May 18.—N° 1627.

CLARK, Alexander Melville.—(*A communication from Jules Decoudun.*)—"Improvements in apparatus "for ironing and finishing linen and other fabrics."

The apparatus consists of a polished heated metal surface, in close contact with which travels an endless web of felt or woollen material carried on rollers, to which motion is imparted either by hand or other
er. The linen or fabric to be ironed or finished is introduced between the web and the heated surface
drawn through by the motion of the former. The rollers are adjustable for the purpose of obtaining
ter or less pressure on the metal plate. The fabric may first be spread out on a jointed part and then
ught up to the travelling surface so as to prevent creasing. The fabric is held by a gripping bar in
tact with the felt and thrown out of action by a treadle.

A glazing roller may also be combined in an ironing machine on this principle, made either of cast iron
wood covered with paper, which is simply coiled round in the direction of motion of the roller.

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* The word "continuously" is found in the copy of the Abridgment delivered by the Applicants, but does not appear in the riginal Abridgment.

The smoothing plate may either be heated by an ordinary stove or be made hollow and heated b
gas jets, a spirit or other lamp, or hot water.

[Printed, 2*s.* 2*d.* Drawings.]

A.D. 1868, May 18.—N° 1628.

MITCHELL, Joseph.—" Improvements in railway and other carriage springs, and in the mach
" apparatus for manufacturing the same."

To prevent the plates of which flat or elliptical springs are composed from shifting on one an
corrugation or indentation is formed at the central part of each plate, and these corrugations or inde
are made to fit into each other or to receive bolts or projections connected with the clip plates.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, May 18.—N° 1629.

GRANTHAM, John.—" Improvements in the construction of iron and steel built ships and in rud

This Provisional Specification describes making the external frame of a ship horizontal and of an
bars with a sheathing of timber; the internal frame is also of angle iron bars, vertical or partly vert
partly horizontal. It also describes the use of sheet lead interposed between the iron or steel
frame of the ship, and the sheathing metal; also the making the rudder and rudder post of brass
alloy of copper; also making the frame of the rudder of iron or steel, and covering with sheets of c
other metal.

[Printed, 1*s.* Drawings.]

A.D. 1868, May 19.—N° 1630.

VAUGHAN, Edward Primerose Howard.—(*A communication from Paul Curie.*)—" Improvem
" the preparation of anhydrous chlorides by means of sulphides or their elements."

This invention consists in the manufacture of anhydrous chlorides, such as those of aluminium
nesium, and silicon, by reaction with chlorides, such as those of potassium, sodium, and calci
others equally anhydrous, either on such sulphides as those of aluminium, magnesium, or silicon,
the elements which can form such sulphides, and sulphur or bi-sulphide of carbon.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 19.—N° 1631.

VAUGHAN, Edward Primerose Howard.—(*A communication from Charles James Irwin Grant,
de Longueuil.*)—" Improvements in the construction of pipes for smoking."

The pipe consists essentially of four parts, the bowl and pipe attached thereto, a water-holder or res
the mouth-piece, and the joint by which the bowl and mouth-piece are connected with the water-hold
reservoir. The connecting joint is placed between the bowl-tube and the mouth-piece, and at right
thereto, the upper part being constructed with two cavities or recesses, one of which communicates wit
bowl-tube, and the other with the mouth-piece. A channel is formed from the former cavity, a
continued downwards through the connecting joint into the water-holder. A small pipe is also fixed i
connecting joint, the upper end of which pipe opens into the cavity or recess in communication wit
mouth-piece, the lower end of the pipe descending into the water holder. The water holder is half
with water, and the pipe smoked in the ordinary way, when the smoke will pass through the water an
cooled and deprived of its noxious qualities.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 19.—N° 1632.

PEARCE, Richard.—(*Provisional protection only.*) — " Improvements in the separation of copper
" other metals from silver."

This invention relates more particularly to the purification of silver which has been precipitated fro
sulphate, nitrate, or chloride, by copper, but is also applicable to the analogous treatment of other met

The impure silver is place on a filter in a boiler; water is added, together with a little sulphuric
steam, with air mingled therewith, is then admitted by means of an injecting apparatus; violent ebull
ensues, and the copper becomes oxidised, and is dissolved by the sulphuric acid. The solution of sul
of copper is afterwards drawn off, the silver stirred so as to make it a little more granular, a fresh s
of slightly acidulated water added, and the mixture is then boiled. The solution having been drawn of,
silver is carefully washed, and when dry has only to be melted in crucibles for fine silver, without fur
refining.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 19.—Nº 1633.

FLACHFELD, Julius.—(*A communication from Josef Leiter.*)—(*Provisional protection only.*)—"A new "manufacture of cases for pipes and tubes used in smoking."

The cases are made of vulcanite, ebonite, or hardened rubber.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 19.—Nº 1634.

RIDDELL, David.—(*Provisional protection only.*)—"Improvements in the manufacture of bread, biscuits, "and other preparations from flour, also in the manufacture of flour to be used therefor."

The feature of novelty which constitutes this invention is the application of flour, made from Indian corn, to the manufacture of bread, biscuits, etc. This flour may be used either alone or in combination with other flour for such purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 19.—Nº 1635.

STEEL, James.—(*Provisional protection only.*)—"Improvements in cask-washing apparatus."

The improved apparatus comprises a large disc or chuck plate fixed on the overhanging end of a horizontal shaft made to revolve backwards or forwards at any convenient speed. A series of cradles to receive the casks are arranged in a circle on the face of the disc, and are mounted on journals connected by bevil gearing with each other and actuated by suitable gearing. The casks are placed in the cradles with their axes coinciding with the cradle journals; and when the machine is in action, each has a rotation about its own axis combined with the motion due to being carried round by the rotating disc.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 19.—Nº 1636.

ELCE, John.—(*Provisional protection only.*)—"Improvements in 'temples' employed in looms for "weaving."

According to the first part of my improvements the novelty consists in supporting the ordinary temples and rollers employed for keeping the traverse tension of the cloth uniform, and a bracket secured to the ordinary temple rod, a set screw in a projection of such bracket being arranged for the purposes of adjustment, thereby enabling the operator to adjust or place the temple and rollers obliquely or inclined from the plane of the reed, by which means any desired stretch to the cloth may be obtained. According to the second improvement in temples the novelty consists in arranging a series of sliding bars in relief around the periphery of a roller, the ends of the said bars being governed in their lateral movement as they are carried round by the traverse of the cloth by means of inclined surfaces formed round the inner ends of the box; thus as the cloth is passing on to the cloth roller the sliding bars successively move outward from the selvedges, thereby constantly distending and holding out the traverse tension of the cloth one uniform width.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 19.—Nº 1637.

COOPER, Duncan Anderson.—"Improvements in solitaires or fastenings for gloves and other articles "of dress."

This invention consists of a solitaire or fastening to be applied to the buttons and button holes of gloves and other articles of dress.

It consists of a flat or hollow body or shell having at the back of one end a stud or head and at the opposite end two projecting plates or ears separated by a taper opening or slot. The stud or head is passed through the button hole of the glove or article and fastened thereto. When it is wished to fasten the glove or article the button of the article is passed under the projecting ears by a sliding motion. The body of the solitaire may be made of two closed shells instead of an open shell, and the stud or head may be carried by a spring sliding bar and thereby made to adjust itself to the thickness of the wrist or other part of the person, and may also be made to screw or turn round.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 19.—Nº 1638.

POLLOCK, John.—"Improvements in instruments or apparatus for drawing corks from bottles."

This invention consists of a curved rod or bar having at one end a ring or collar which fits on the mouth or top of the neck of the bottle from which the cork is to be drawn, the upper end of the said rod or bar terminating nearly over the neck of the bottle. After the corkscrew has been passed into the cork the ring of the curved rod or bar is placed on the neck of the bottle, and by placing and supporting the palm of the hand on the top of the curved rod or bar and grasping the handle of the corkscrew by the fingers the cork is readily withdrawn. The curved rod or bar may be separate from or connected to the corkscrew by a swivel joint, and may also be made capable of being turned down from over the handle of the corkscrew.

[Printed, 1*s*. Drawings.]

A.D. 1868, May 19.—N° 1639.

GRIFFEN, Theodore.—" Improved apparatus for bleaching and cleansing fabrics."

A pan boiler or vessel having its bottom preferably concave, so as to form a groove or channel, and heated by means of an ordinary fire or otherwise. Within the vessel is a perforated false bottom with conical tubes or deflectors, and pipes, tubes, or passages, which may be bent to form handles, lead from the space beneath the false bottom to the upper part of the interior of the vessel, where they terminate in roses or equivalently formed nozzles. The fabrics to be operated upon are placed above the false bottom, and when the liquid below is agitated by boiling it passes up through the tubes and falls on to and passes down through the fabrics.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 20.—N° 1640.

JONES, Wright and HETHERINGTON, Joseph.— (*Provisional protection only.*)—" Improvements in " machinery for stretching woven fabrics."

In this invention two drums or pullies are employed revolving on centres inclined in different directions from a straight line. The two drums are mounted on carriages, one or both of which can be adjusted so as to suit different widths of fabric, and the circumferences of the said drums are covered with card cloth or other similar material so as to hold the cloth. The cloth is led on to the drums at the side where they approach each other and leaves the drums on the opposite side, or at any intermediate point, being stretched to a certain extent by the divergence of the drums. Sometimes hot air is admtted to the interior of the drums, or steam on one side and hot air on the other. In some cases a series of clips or holders is employed in lieu of the " card cloth " the said clips being drawn back by a cam as the drum revolves to admit the selvedge of the cloth and when released are pressed by a spring against a flanch on the drum, the ends of the clips and the flanch being suitably bevelled to retain the selvedge. In another arrangement the cloth is drawn between two plates, each of which is grooved, the said grooves inclining in contrary directions from the centre line of the plates, and the ridges in one plate corresponding with the grooves in the other.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—N° 1641.

JOHNSON, Henry Hilditch.—(*Provisional protection only.*)—" An improved mode of advertising in " railway tunnels and cuttings."

My invention is based upon the optical delusion which has heretofore been produced by a series of pictures or designs arranged in a peculiar manner and caused to move past the eye of a spectator standing at a suitable fixed point. In carrying my invention into practice I arrange a series of fixed pictures or designs, each in a different progressive attitude or position, upon the wall of a tunnel or cutting, and the illusive effect of their apparent motion is produced upon the passengers in a train travelling past the pictures.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—N° 1642.

KENNETT, John.—" An improved method of ventilating sewers."

Forming a connection between the sewers of a town and the public street lamps by means of a pipe.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 20.—N° 1643.

FRY, James.—" Improving the construction of folding perambulators in order to contract them into a " smaller compass."

The spring connected with the axle is made to pass from the heel board through the foot board or bottom; by means of which action the back wheels of the perambulator are brought forward to its toe.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 20.—Nº 1644.

FROEHLICH, Robert.—(*A communication from Bellina Froehlich.*)—"Improvements in means or "apparatus for opening sardine and other sheet metal cases or receptacles, which improvements are also "applicable to cutting sheet metals and other materials."

For this purpose an instrument is employed, one jaw of which is pointed and formed with a suitable cutting edge and somewhat in the form of one jaw of a pair of shears, whilst the other jaw is provided with a pair of rollers or discs, mounted on a suitable axis, and between which rollers the other jaw is caused to work.

A suitable spring is employed to force the jaws open.

If desired, only one roller or disc may be employed in combination with the pointed jaw.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 20.—Nº 1645.

TAVERDON, Claude Ludovic, and MORET, Jules.—"An improved lift and force double-action "pump, giving a continuous and regular supply of liquid."

This invention consists in the application to a pump of a double headed stamped leather piston playing in a cylinder divided into two compartments by a moveable diaphragm, so that each head of the piston plays in a separate part of the said cylinder. The heads of the piston are united by a tube, perforated at its lower part, and the water raised by the suction of the lower head of the piston in its upward movement enters the connecting tube sliding in the centre of the diaphragm and is thus carried up into the upper compartment of the cylinder. The upward movement of the upper head of the piston exhausts at the same time in the compartment where it plays; this upper compartment of the cylinder being perforated for the passage of the liquid in a surrounding chamber in communication with a compressed air chamber. By their downward motion both heads of the piston force the liquid in the lower compartment of the cylinder out of the upper one, and then through the delivery pipe.

No valves are used in this pump, the heads of the piston acting alternately as pistons and as valves.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 20.—Nº 1646.

HUTCHINSON, Andrew George.—"Improvements in apparatus for offering resistance to the opening "of doors, windows, and other moveable parts, and for giving alarms in cases of improper and burglarious "attempts to open the same."

This invention relates to that class of portable apparatus used for (a) securing or offering a resistance to the opening of doors, windows, &c., and (b) giving a signal; and consists in combining with (a) only, or with (a) and (b), a clock or spring alarum, the object being to give a prolonged and loud signal. The alarum which I prefer to use has a coiled spring, train of wheels, and escapement motion, the pellets carrying the hammer, which latter as it vibrates strikes the bell or gong. When the apparatus is in position for use the detent of the alarum is held by a catch piece; on the door, &c. being moved the catch releases the detent, and thereby the alarum is put in motion.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 20.—Nº 1647.

NUTTALL, Francis Dixon.—(*Provisional protection only.*)—"Improvements in reverberatory furnaces "for roasting and smelting purposes."

Object.—To enable metallurgists and chemists to avail themselves of the advantages derived from the employment of hot air to effect better combustion of coal, coke, or other fuel.

Construction.—A pipe or several pipes of metal or other material is or are led from the front of the fire chamber over the burning fuel backwards to about the bridge. Air enters through these pipes, becomes heated, and escaping amongst the gases evolved from the fuel induces or promotes the desired combustion. The fire doors and ash pit doors can be adjusted so as to admit more or less air. The bridge is made hollow to render it durable and admit air.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—Nº 1648.

WHITELEY, Joe Booth.—"Improvements in machinery for stretching, drying, and producing the "'elastic finish' on woven fabrics."

The novelty consists in,—

The production of this elastic finish by keeping both chains in motion, each having a forward and backward motion imparted in such manner that while one is advancing the other is receding in like man so that the action upon each list or edge of the fabric is equal in effect, and a progressive motion is given to the chains to carry the fabric through the machine.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 20.—N° 1649.

BELL, Anthony.—(*Provisional protection only.*)—" Improvements in the valves of steam engines."

The novelty consists in,—

Causing the valve to work in a casing fixed in the steam chest; the inner surface of the casing and o surface of the valve being rendered steam tight by packing. The strap is formed of two parts, T pie being forged on each valve spindle; said T pieces dropping between the projecting ends of lugs fixed to valve and acting in the ordinary manner.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—N° 1650.

BATHO, William Fothergill.—" Improvements in machinery for planing or shaping metals, wood, " other materials."

The novelty consists in,—

A series of cutting tools acting simultaneously on different parts or faces of the work operated upon. machinery consists of a frame in which, in suitable bearings, are mounted spindles radiating to a fixed p in the centre of the said frame, each spindle carrying a cutting tool. The object to be operated upo carried between centres or spindles carrying vices connected to a top and bottom frame, and these two fra are connected to three vertical shafts which work in bushes placed in the main frame of the machine. vertical feed motion is given to this tripod frame by a screw or rack. In some cases a combined rotary vertical motion is given to the object operated upon.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 20.—N° 1651.

HOSKOLD, Henry Davis, DAVIS, John, and WHEELER. George Printy.—(*Provisional protectio only.*)—" Improvements in the manufacture of artificial fuel."

Fuel is made from small coal or coal dust, clay, resin, or other cementing matter and sulphuric acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—N° 1652.

POIRIER, Zacharie.—(*Provisional protection only.*)—" A new or improved safety stopper for bottles and " other vessels."

This invention consists of a new or improved safety stopper intended for glass, stone, and other bottles of every description, also carboys and other receptacles or vessels for sulphuric and other acids or essences and for closing tightly all bottles containing champagne and all other wines, lemonade, soda water, ginger beer, and all other gaseous or effervescing drinks.

This stopper is composed of a short india rubber or cork tube, into the upper part of which is inserted a ring, the said ring being attached by tying or any other way with the compressible tube. A screw taped peg as thick as the inner diameter of the tube having a conical head is introduced in the tube at the lower part, it runs through the said tube and ring, and is fitted at its upper part with a sound screw nut. The stopper thus fitted is introduced into the neck of the bottle to be closed, and if the screw nut is turned to the right hand with the fingers the conical head of the screw taped peg ascends and forces its way in the compressible tube, which yields according to the pressure which is given by turning the nut, forming thus a tight fitting, and as the lower part of the neck of bottles have a conical shape it is impossible for the most powerful pressure of gaseous liquids to drive out the stopper, which may be gently pulled out by merely turning the screw nut towards the left with the fingers. The screw taped peg is prevented turning round with the nut by a small spur of the ring which enters a groove cut lengthways of the said peg and allowing it only to slide up and down.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—N° 1653.

LESLIE, Alexander.—" Improvements in machinery or apparatus for steam cultivation."

This invention consists in the use of propelling wheels having teeth (diagonal preferred) set at opposite angles.

The arrangements for driving the propelling shaft.

The method of steering, including the position of the wheels and arrangement of levers.

The arrangement of the cultivating implements, with all the wheels travelling on unmoved ground.

Raising the implements by means of a cam.

Stretching apparatus applied to a self moving engine.

The use of springs between the carriages and the forks carrying steering wheels in order to make the wheels bite when running over uneven surfaces.

[Printed, 2*s*. Drawings.]

A.D. 1868, May 20.—N° 1654.

JONES, David, and JACKSON, James.—(*Provisional protection only.*)—" Improvements in apparatus " for imparting heat to the feet and body whilst travelling or otherwise."

This invention has for its object imparting warmth to persons travelling in railway or other carriages, or seated in churches, or in other situations in which the feet and body are liable to become chilled during the colder seasons of the year; and this invention consists in employing for the above named purpose the heat derived from the flame (or flames) of a lamp, candle, or of gas arranged within an apparatus which may be either portable or a fixture, and upon which the feet are placed after the manner of a foot stool.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—N° 1655.

TIJOU, William.—" Improvements in steam pumps."

This invention consists of a peculiar arrangement of direct acting steam pump, wherein the working cylinder is provided with a cylindrical valve which receives a partial rotatory motion in its valve case from a scroll grooved rocking frame in connection with the valve spindle itself. This frame is vibrated by a friction bowl carried on an arm projecting from the piston rod and working against the opposite edges alternately of a differential groove or slot in the frame as the piston moves to and fro. The cylindrical valve is hollow, and the steam has constant access to the central hollow space thereof. In two portions of the valve's circumference there is formed longitudinally thereon an oblong chamber or recess of a length sufficient to cover one of the steam ports and exhaust port in the cylinder. On the same line with this oblong recess, but on opposite ends of the valve in each face there is formed a port leading through to the centre or steam space of he hollow cylindrical valve, such port communicating with the opposite steam port of the working cylinder. On turning the valve partly round it follows that as the positions of the oblong recess and valve port are reversed in each face of the valve, the course of the steam will be reversed. The exhaust may, if desired, be directed into the suction pipe of the pump so as to heat the water and form a vacuum in the working cylinder. The piston rod or ram of the force pump forms a continuation of the piston rod of the actuating cylinder. By the above described arrangement all rotatory shafts, and fly wheels, and eccentrics are avoided and great compactness is insured.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 20.—N° 1656.

HAVELL, Charles Richard.—" Improvements in the means or apparatus for heating water for baths " and other purposes."

I employ a closed metal box of cylindrical or other form, which I submerge in the water to be heated (in a bath, for instance) and heat it by means of a coiled gas tube or burner at bottom, which coil is perforated so as to emit jets of gas. The gas pipe passes up through a central vertical air shaft, or is otherwise connected with the supply. Around the lower part of the air shaft and over the burner I place a cylindrical water chamber, leaving a space between it and the sides and top of the heating vessel for the circulation of heat. There is also an annular space in the bottom of the water vessel communicating with the space above. The water vessel further communicates at top and bottom with the water in which the apparatus is immersed so as to produce a constant circulation. The products of combustion pass away by a chimney by which access is had for igniting the jets.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 20.—N° 1657.

ENGLAND, William.—(*Provisional protection only.*)—" Improved apparatus for measuring liquids."

Applied to the supply cask is a two-way cock fitted with a graduated measure which is to receive the liquor from the cask and will indicate with precision the quantity of liquor drawn out.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—Nº 1658.

NEWTON, Alfred Vincent.—(*A communication from Caroline Garcin and Amelie Garcin.*)—"Improvements in sewing machines."

This invention relates to the working of sewing machines by a self-contained motive power (derived from coiled springs) that will maintain them in action for a considerable time.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 20.—Nº 1659.

INGLIS, William.—"Improvements in steam engines and boilers."

The improvements in steam engines are specially applicable to "Corliss" engines, and they consist in casting the inner cylindrical shell separately from the outer shell of the steam jacket, and casting in separate pieces the ends containing the valve boxes, and in uniting these several parts by joints running round the cylinder in planes at right angles to its axis. The same arrangement may be adopted at both ends, or the valve boxes for one end may be cast either with the inner shell or with the outer shell. The end covers may be cast in separate pieces or each or either along with the adjacent valve-box piece. The improved way of making the valve boxes, at one or both ends separate, and uniting the parts by a joint of the kind described is applicable to cylinders made without jacket spaces.

The improvements in steam boilers relate to the class of boiler described in the Specification of Patent, No. 652 of 1863. The improvements consist in making the end casings in compartments and in sections; a compartment comprising a single vertical row of tubes, and a section comprising two such compartments, communicating with each other at the top and bottom. Openings are formed in the outer side opposite each tube for access to clean the tubes. These openings being covered by plates held by means of bridles and screws. Upper shells or vessels are made for each section, that is for each couple of vertical rows of tubes, and the sections are made so that any number may be erected together side by side and in communication with each other.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 20.—Nº 1660.

SIM, William.—(*Provisional protection only.*)—"Improvements in arrangements or apparatus for watering and cleansing streets and roads, and in the application of apparatus for removing snow to other purposes."

This invention relates to the arrangements described in Patent No. 3337, 1867. By the present invention when perforated pipes are permanently laid at the sides of the streets for watering purposes it is proposed to water at the crossings or wherever circumstances require the interruption of the fixed piping by means of a length of flexible tubing or hose pipe coupled to a fire cock or hydrant and having attached at its free end a tubulated spray pipe to be held by a street keeper, and to be directed so as to throw the spray when required. By the present invention also the application of the flexible tubing and tubulated spray pipe may be used over the whole street or road, and so as to dispense with all permanently fixed perforated pipes.

Another improvement relates to the travelling furnace described as for melting snow in the earlier Patent, and consists in applying it for drying or desiccating road scrapings, manure, or other materials.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—Nº 1661.

BOUSFIELD, George Tomlinson.—(*A communication from Erastus Brigham Bigelow.*)—"Improvements in power looms."

This Provisional Specification describes, firstly, apparatus for raising jacquard mechanism. To adjust the height of harness cords the jacquard mechanism is supported by four cams, one at each corner; the cams are carried by shafts acted on by worm and worm wheel gear also acting on the journals and trapboards of jacquard by levers pivotted on an axis at right angles to lay shaft. Cords from the top of levers are led horizontally over guide pulleys and down to the trapboards, and to the levers which vibrate the card cylinder. Also a mode of constructing and operating a cam for shifting the shuttle boxes of power looms; also a mode of actuating the mechanism which shifts the series of shuttle holders; also modes of constructing the apparatus for engaging and disengaging the driving pulley with the driving shaft; also a mode of constructing and operating the reversing mechanism for turning a loom backwards; also a mode of constructing the harness motion; also a mode of governing the order of succession in which the shuttles are thrown; also a mode of governing the action of the mechanism employed to shift the shuttle boxes.

[Printed, 5*s*. 2*d*. Drawings.]

A.D. 1868, May 20.—N° 1662.

BARNARD, Charles.—" Improvements in chairs and other articles of furniture to sit or recline upon."

This Provisional Specification describes forming seats of chairs and other articles with elastic wires or rods fixed in the frame and passing in a spiral course to a boss in the centre to which they are fixed.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 20.—N° 1663.

CONVERS, Jules.—(*Provisional protection only.*)—" Improvements in cranks, and crank shafts and axles."

The crank pin or part joining the outer ends of the arms of the crank is made hollow or has an opening, passage, or socket bored or otherwise formed in or through it, into which a bolt or pin is fitted or placed and secured by any suitable means. The arrangement may also be applied to crank shafts or axles at the neck or the junction of the inner ends of the cranks or crank arms with the body of the shaft or axle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 20.—N° 1664.

LAKE, William Robert.—(*A communication from Mary Ann Duffy.*)—(*Provisional protection only.*)—" An improved device for marking and creasing tucks in cloth or other material upon a sewing machine."

My invention relates to sewing machine gauges, and the chief object of the said invention is to afford the means whereby the line of a tuck in a piece of cloth or other material may be marked or creased without the cloth being first folded. The marking or creasing is effected by means of a spring lever operated by the presser-foot of the sewing machine, to which my invention is applied. The spring marking lever is attached to the tucking plate, and is formed with a groove at one end to receive a lip on the said plate. The cloth is folded to the width of a tuck, and its folded edge is passed over the tucking plate and lip and under the marking lever and tucking gauge up to the inner edge of the plate and gauge holder. The line of sewing will be the lip of the tucking gauge, and the tuck the turned cloth that is left between that line and the inner edge of the plate holder.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 21.—N° 1665.

CHAPMAN, Charles, and **LILLEY**, John.—" Improvements in ships' compasses."

Our improvements relate to the adaptation of the compasses of ships by a modification of part of the same as a means of indicating the manner in which vessels should pass each other when steaming or sailing so as to avoid collision, and thus form a " new rule of the road at sea."

Our improvements consist chiefly in making the dials or cards of the compasses with apertures in them, and underneath the apertures we place printed instructions or rules on another card or dial, the rules being so printed or arranged as to come immediately beneath and be seen and read through the apertures.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 21.—N° 1666.

HAMMANT, William.—(*Provisional protection refused.*)—" A new or improved aerial machine or " apparatus."

The novelty in this case consists of a tubular framing of thin metal charged with hydrogen gas; rotating and feathering fans for ascending; side frames or wings with feathering blades for descending and supporting; and screw-blades on a jointed or geared axle for propelling and steering.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 21.—N° 1667.

PALLISER, William, and **BOLTON**, Francis John.—" Improvements in ordnance and in wads to be " used therewith."

One part of this invention consists in adapting the converted cast iron guns and compound guns described in the Specification No. 3507 of 1867 as breech loaders by forming a hole either entirely cylindrical or partly tapering through the breech end of the casing and of the B tube, which hole has a female screw thread formed so as to be in relief as compared with the respective bores of the casing and B tube, but which is of larger diameter than the bore of the gun. Into this hole screws a plug or breech piece carried by a collar hinged to the gun, and having guiding screw threads through which the breech piece screws. A spring bolt is provided in the collar for preventing the breech piece from screwing out too far and also for preventing it from unscrewing through the concussion on firing. The collar is also held by a catch when closed against the gun. The breech piece is turned by means of Sir William Armstrong's tappet levers. The hole into which the breech piece screws is sometimes lined with a screwed bush of wrought iron or steel, which may be made to extend over the inner or A tube of the barrel so as to constitute the outer or B tube thereof.

The inner end of the breech piece is formed cupped and with tapering sides fitting into a tapering seat in the barrel, or it may have a tapering projecting ring overlapping the end of a "chamber liner" and fitting into a tapering seat in the A tube.

In making new compound guns as described in the before mentioned Specification it is proposed, in place of using ordinary cast iron, to first convert this into steel or homogeneous metal and run it direct from the Bessemer converter or other furnace into the mould. It is also proposed to construct the before described system of breech loaders with a casing of wrought iron.

Another part of the invention consists in a system of "excentric rifling," whereby the projectile is maintained in its original excentric position relative to the axis of the bore during its passage through the same. For this purpose only three grooves are employed, one of which is at the starting point situated at the lowest point of the circumference of the bore, and is slightly nearer to the groove situated on its driving side than it is to the groove situated on the other side. It is also made somewhat wider on the loading side of the groove.

Another part of the invention consists in making gun wads of a consolidated pulp formed of a mixture of fibrous and gelatinous materials, the wad being made either entirely of such compound or with a central plug of wood. The wad has a central hole for the end of the cartridge to pass through, and is also hollowed out to fit the cartridge, and at the front surface it has a projecting rim to fit the shape of the end of the projectile. The wad may be waterproofed either superficially or by incorporating the waterproofing substance therewith.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, May 21.—N° 1668.

CHAMEROY, Edme Augustin.—"An improved liquid or gas meter."

This invention consists in the combination of a valve contained in a conical chamber with a balance weight or frame carrying a spindle receiving motion by frictional contact with the face of a revolving disc actuated by clockwork mechanism; the valve being made to rise or fall according as a greater or less quantity of fluid is passing through the conical chamber, the spindle of the balance frame receives a correspondingly increased or decreased motion by coming in contact with a different part of the rotating disc, which motion is imparted by a pinion on the spindle to the wheels of a counter.

When the valve is closed and no fluid or gas is passing through the meter the spindle is in contact with the centre of the disc and consequently has no motion imparted to it.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 21.—N° 1669.

HADFIELD, William.—(*Provisional protection only.*)—"Certain improvements in looms for weaving."

The novelty of the invention consists in the employment of three plain rollers in looms for positively taking up the cloth as manufactured in contradistinction to a sand or roughened roller and cloth roller as now employed, the peculiar arrangement of the three rollers being such that the roller first receiving the cloth underneath the breast beam, supported in sliding bearings, is caused by the tension of such cloth to press against the periphery or surface of the middle roller, which being the driver and covered with india rubber or other yielding material receiving the cloth from the top roller and passes it on to the cloth roller which is kept in contact with the middle driving in the ordinary manner. The middle driving roller has a slightly increased speed in comparison with the top roller, which may be effected by their gearing wheels or an increase in the circumference of the middle driving roller; the difference in the speed of this roller gives a slightly excessive pull upon the cloth over and above the top roller, thereby maintaining the cloth at one uniform tension throughout the piece.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 21.—N° 1670.

POYNTER, John Edgar.—"Improvements in the manufacture of soap."

This invention has for its object the manufacture of an improved soap, and it consists in combining borax with the saponified, fatty, or oleaginous substances ordinarily employed in making soap.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 21.—N° 1671.

BOOTH, James.—(*Provisional protection only.*)—"Improvements in fastenings for bags of paper, linen, "or other flexible materials."

This invention consists in securing to the bottom of paper and other bags a ring or rings of india rubber to be used for fastening down the mouth of the bags after they have been filled. The ring or rings in the case of square bottomed bags are passed under the angles or points of the flaps at the bottom of the bag, and the flaps are then pasted down and the ring or rings secured to the bottom of the bag. In the case of flat bags a portion of one of the overlapping edges at the bottom of the bag is passed through the ring or rings before the edges are pasted together. Instead of attaching a ring to the flap or edge of the bag, a strip or band of india rubber may be attached to or passed through a hole in the said flap or edge and afterwards tied or connected together so as to form a ring, and the ring or rings may be attached to the top or side of the bag instead of to the bottom of the bag.

By this invention the mouth of the bag is fastened down more rapidly and economically than by the ordinary method of tying with string.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 21.—N° 1672.

CROFTS, John, DAWSON, Richard, and KING, John.—" Improvements in means or apparatus for " combing wool or other fibres."

The improvements relate to that class of apparatus in which the fibre to be combed is simultaneously laid on to two sets of holding combs, and a drawing out or separation of the fibres takes place by the separation or divergence of these combs in their progressive motion.

In carrying out the improvements, in place of these holding combs being formed as is usual in circles, they are formed in short lengths connected together as chains, so as by preference to be endless. The direction of their motion is controlled by guides and rollers or pullys, one set of the holding combs, say the inner, are formed in two parts or series, with the points of one capable of passing in between those of the other after receiving the feed of fibre.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, May 21.—N° 1673.

ALLEN, Edward Ellis. — (*Provisional protection only.*) — " Improvements in the mode of packing, " covering, or making up materials, wound upon spools or in the form of bundles or skeins."

Covering spools of sewing cotton, silk, thread, or cord with elastic covers or tubes to prevent soiling and unreeling.

Enclosing bundles or skeins of thread or silk in elastic tubes or cases in place of ordinary " thread papers."

Encasing spools in boxes having slits through which the end of the material wound may be drawn as required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 21.—N° 1674.

PERRY, Stephen, MILLS, Benjamin Joseph Barnard, and BRAMPTON, Frederick.—(*Provisional protection refused.*)—" Improvements in letter clips, bill files, and other similar clips or suspenders."

The invention consists, firstly, in improvements on the American wooden letter clip. For this purpose the hinges or connections are formed of plates of metal fixed by preference rigidly to one half of the clip, whilst the other half is connected to each plate by a pin, or only one plate may be employed passed through slots in the jaws of the clip and fixed thereto as above described.

Another arrangement consists in forming the wooden letter clip with parts at or near the centre of one jaw passing into, between, or through parts at or near the centre of the other jaw, a pin being passed through such parts to connect them together; or, if desired, suitable projections and recesses may be formed at one end of each jaw, combined with which arrangement is sometimes employed a sheet metal spring fitting round or clasping the end thereof, and sometimes two or more springs are employed to force the jaws together.

The invention relates, secondly, to screw letter clips or suspenders, and consists in employing a loose plate, disc, or washer between the screw nut and the articles to be held, such plate, disc, or washer being connected to the other disc or plate by a link or other suitable means, and in some cases a ring or hook is connected to the clip to facilitate its suspension. This part of the invention is also applicable to bill files, the disc carrying the screw being fixed to the back.

Another part of the invention consists in the application of an adjustable hinge to such articles, the two jaws being forced together by a screw and nut.

The invention also consists in forming such articles with a slot or opening in one jaw whilst to the other jaw is fixed a screw or pin having a suitable head fixed thereto. The head of the pin or screw is capable in one position of freely passing through the slot or opening, and then of being turned round so as to hold the two jaws firmly together.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 21.—Nº 1675.

MESSENGER, Thomas Goode.—" Improvements in fire engines or double-action pumps."

The engine or pump has a base having spaces in it which convey the fluid from valves to each end of a cylinder in which a solid plunger works and forces the fluid through other valves into an air vessel and thence to a jet, spout, or mouth. The valves are accessible by unscrewing one nut only without taking the engine or pump to pieces. The plunger is actuated by a rack and quadrant or equivalent contrivance which may be worked by hand spikes. There may be a second motion for one man to work. The rack acts on the piston by being attached to its rod which works through a gland. The whole is mounted upon wheels, the hand spikes serving for handles.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 21.—Nº 1676.

REVILL, Joseph.—" Improvements in revolving or coiling shutters."

The novelty of this invention consists in making the laths with a rule joint, so that the shutters will be flush on their surface; the laths are joined by chains, gutta percha, or leather, thro' holes bored horizontally in each lath; the shutters are made to hang from below, above or sideways, and are worked on rollers by ratchett wheels & pullies.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 21.—Nº 1677.

FRYER, Robert, and FRYER, John.—" Improvements in machinery or apparatus for tilling land."

This invention relates to those agricultural machines commonly called cultivators. A drum armed with teeth which take into the ground is mounted upon a frame and gives motion to another drum provided with tines and capable of being raised or lowered by a screw; these tines pulverize the earth by their rotation.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, May 21.—Nº 1678.

STARLEY, James.—" Improvements in sewing machinery."

Points of novelty, (1) a cam (for working the needle) with a diagonal groove in which works a forked piece connected by a ball and socket joint with the rocking arm of the vertical needle.

(2.) The relative positions of the needle, rotating hook, and bobbin are peculiar for this class of machine. The bobbin lies in front of the descending needle, and the point of the hook works at the back of the needle.

(3.) The feeding plate is carried by a crank lever mounted on an elongated horizontal spindle which has its bearings in lugs cast on the under side of the table of the machine.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 21.—Nº 1679.

BATTY, John Roberts.—" Improvements in saddles for frames used in the spinning of flax or other " fibrous substances."

The improvements consist in a link saddle constructed with three links. The first link is fixed at one end to the beam, and at the other to the second link to which it is joined by an ordinary loose joint, and the second and third links are attached to each other in like manner as the first and second links.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 21.—Nº 1680.

NEWTON, William Edward.—(*A communication from Marie Joseph Denis Farcot, Jean Joseph Leon Farcot, Michel Basile Abel Farcot, and Joseph Etienne Eloi Chateau.*)—" Improvements in governors for " steam and other motive power engines."

The governor balls are fixed on arms or rods jointed to an isosceles arrangement of levers which are jointed at bottom to a rising and falling weight which acts on the valve gear.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 21.—N° 1681.

HALL, Henry, and MASON, Joseph Anthony.—" Improvements in apparatus for propelling vessels."

This Provisional Specification describes propelling apparatus in which an endless web or band is employed.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 21.—N° 1682.

BEAUMONT, Frederick Edward Blacket, and APPLEBY, Charles James.—" Improvements in " apparatus for drilling rock and stone for blasting and other purposes."

This Provisional Specification describes apparatus for drilling rock by means of diamonds.

The apparatus is so arranged that the feed may be positive so long as the diamond or gem cutters meet with no more resistance than they can safely be allowed to overcome, but when the resistance exceeds this amount then a spring which forms the abutment for the drill yields slightly, and in so doing separates the feed mechanism from the driving gear. Arrangements for communicating the driving power to the drills are also described.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, May 21.—N° 1683.

WHITTAKER, John Williamson.—" Improvements in carding engines."

According to this Provisional Specification there is employed in place of a large main cylinder a number of small rollers revolving at a much greater number of revolutions, but it may be at a smaller surface speed. Each of these rapidly revolving rollers works the fibre with a roller revolving slowly and opposing its teeth to it. This slowly revolving roller is stript by the next rapidly revolving roller of the series, the fibre being then not worked, but simply lifted off the teeth of the slow roller.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, May 21.—N° 1684.

RAYNER, Robert.—(*A communication from Albin Warth and Eberhard Faber*).—(*Provisional protection only*.)—" Improvements in frictional gearing."

This invention consists in constructing friction wheels or pullies of a core of wood or metal, and covering the same with a layer of india-rubber or other soft and elastic material which is finally covered by a jacket of leather, felt, or other flexible or rigid material secured to the core in any suitable manner. By these means grooved, flat, or other faced pullies may be constructed so as to effectually prevent their slipping when in use.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 21.—N° 1685.

CLARK, Alexander Melville.—(*A communication from Michel Loup*.)—(*Provisional protection only*.)—" Improvements in differential gearing applicable to lifting jacks, cranes, windlasses, and other purposes."

Two different speeds are attainable with this apparatus : in the case of a lifting jack, for instance, the lower speed serves to produce power and also to stop the motion with the weight raised at any point. The higher speed as in ordinary raises the lifting gear to any point. The apparatus consists of a ring of, say, twenty-eight teeth fixed to a disc keyed on the principal shaft. A second wheel having, say, twenty-seven teeth is placed in the toothed ring so as to gear therewith, said wheel turning freely on an excentric mounted on the end of the shaft. The excentric is connected to the winch handle by which the lifting is effected, and behind this mounted a second lever forming the fulcrum, having disconnecting gear for throwing the differential motion out of action.

On turning the winch handle the excentric is rotated, carrying round with it the wheel mounted thereon, so as to gear with the ring of teeth, advancing it one tooth for each revolution of the winch, which motion is imparted by a pinion on the principal shaft to the rack for the purpose desired. The weight is held at any point by the arrangement of the apparatus, which causes the strain brought to bear on the fulcrum to press on the excentric.

In applying the invention to a block and fall the excentric is formed in one with the shaft, on which is keyed a pulley forming a substitute for the lever handle of the jack, and provided with an endless cord serving to set the apparatus in motion. The weight to be raised is attached to a chain passing round a wheel keyed to a hollow shaft receiving the one above mentioned. The apparatus is further modified in its application to windlasses, cranes, and other purposes.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 22.—Nº 1686.

FUSNOT, Charles.—"Improvements in central fire cartridges."

In manufacturing these cartridges the means described in the Specification of Letters Patent dated the 22nd October 1863, No. 2597, are employed, the cartridge cases or the cartridge bottoms being made of one piece, but the internal packing ring, the copper cup, the pin, and the paper cylinder supporting the igniting portion of the cartridge are dispensed with. The cartridge bottom carries the cap externally in a central hollow, in which is a nipple for effecting the deflagration; two or more holes are provided for the communication of the fire from the cap to the charge.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 22.—Nº 1687.

ABEL, Charles Denton.—(*A communication from Charles Von Hartmann.*)—"Improvements in the "means and apparatus for drawing cop and other threads through shuttle holes and eyes."

This invention consists in drawing cop and other threads through the holes or eyes of shuttles by means of a mechanically or artificially produced vacuum, suction, or current of air.

For this purpose in one arrangement the end of the shuttle is placed in a socket in which the eye is made to communicate with a chamber having a side aperture, and formed as the conical plug of a cock, and which fits into a casing having a passage communicating with a pipe in which a suction or vacuum is produced by any suitable means.

When not in use the socket and conical chamber are turned by a spring so as to cut off the communication with the suction pipe. In the conical chamber is placed a perforated cup to receive the cop thread as it passes through, and another perforated cup is fixed in the casing to intercept dust.

This apparatus is fixed at any convenient place on the loom, and the requisite vacuum may be produced either by a main air pump, exhauster, fan, steam jet, or the condenser of a steam engine, actuating a number of such apparatus, or a separate exhauster may be applied to each apparatus.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 22.—Nº 1688.

MOLE, Charles.—"Improvements in the manufacture of boots."

These improvements consist in cutting the front upper with a tongue rising high above the instep and blocked to shape, in two leg pieces opening back and front, in a tongue attached inside the heel piece, and a back overlap fastened on the said heel piece.

The foot is introduced from the back, the heel tongue acting as a shoeing horn, and the ends of the back overlap are brought to the front or side and there buckled or otherwise fastened together, whereby (amongst other advantages) the tendency of the foot to push forward in the boot is counteracted and support given to the back tendons and ancle.

The overlap is also sometimes formed out of one of the leg pieces.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 22.—Nº 1689.

NEWTON, William Edward.—(*A communication from Addison Calvin Fletcher.*)—"Improvements in "grate bars."

The grate bars are constructed with fuel points or rests formed by transverse recesses of a conical or tapering character, so as to give an increasing width of opening below relatively to their mouths or tops, and establishing air-heating points.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 22.—Nº 1690.

FOSTER, Charles Joseph.—(*Provisional protection only.*)—"Improvements in obtaining the transverse "reciprocating motions of the cutter bar in reaping, mowing, and other similar agricultural machines, and "improvements in wheels for agricultural machines, which last named improvements are also applicable to "traction engine wheels."

According to this invention geared or toothed wheels are dispensed with for operating the traverse motion of cutters and other apparatus, and a zig-zag slot is cut around the periphery of the road wheel, in which a pin attached to the knife bar enters, when, by the revolution of the wheel, the bar derives a to and fro motion.

A starred wheel is applied to effect a bite or adhesion of the motor wheel; the teeth protrude through holes in the rim, the star wheel rotates in bearings within the motor wheel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 22.—N° 1691.

ARK, Alexander Melville.—(*A communication from Jacques Viglino.*)—"Improvements in rotary
team engines."

n order to diminish the friction and wear of the parts in a rotary engine I make both the piston and
nder to revolve together on separate axes. I mount the cylinder on hollow axes turning in bearings.
se axes further carry the hollow axis of the piston, mounted excentrically to the cylinder, said axis pro-
ng on either side and communicating with the inlet and outlet passages for the steam. On this axis is
her mounted a wheel for operating the piston valve by the aid of an excentric, and also a pulley and fly
el. The piston is fixed to the axis, and is made of smaller diameter than the cylinder. The annular
e between these parts is divided into two chambers of unequal size by diaphragms jointed at one end
he interior of the cylinder and sliding in the piston. The pressure of the steam admitted to the smaller
nber acting on the diaphragms increases its area and diminishes that of the larger chamber, so as to
n an escape for the steam therein, and vice versa. The difference of exposed area of the two diaphragms
er the action of the steam produces half a revolution of the piston for each introduction, and also of the
nder connected therewith, at which moment and on reaching the dead point the piston valve by the aid
the excentric cuts off the supply of steam to the one chamber and admits it to the other for completing the
olution, and so on.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, May 22.—N° 1692.

RY, Jules.—"An improved construction of meter or apparatus for measuring liquids or gases, applicable
lso for obtaining motive power."

his apparatus consists of a metal chamber divided into two parts by a flexible partition, each part com-
nicating either with the inlet or outlet pipes.

o this partition is jointed a lever moving an arbor carrying a second lever furnished with a counter-
ight.

This counterweight, when moved by the rising or falling of the partition, acts upon a series of valves or
de valves, and the arbor being connected to a series of wheels and dials, similar to those used in similar
paratuses, the number of times that the capacity formed by the flexible partition is emptied and filled
registered.

When gas is to be measured, the partition is replaced by a moveable bell dipping in mercury.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, May 22.—N° 1693.

ELAFIELD, Clarence.—"An improvement in furnaces to be used in oxydizing lead or in the manu-
facture of litharge."

My invention appertains more especially to the manufacture of the yellow oxide of lead.

I make an open mouthed oxydizing chamber with a flue in the rear end or side thereof to insure a draft or
sh air over the surface of the melted lead, and with the bottom thereof made of metal in the shape of a
n or pans, and with the bottom of said oxydizing chamber so made in relation to the fire box or chamber
to form the cover or covers thereof.

In the said oxydizing chamber I combine a pair of shafts and endless chains fitted with a skimmer to
vel with the said chain over the said shafts and skim the oxide from the surface of the melted metal. I
ange the flue from the oxydizing chamber and the flues of the fire chamber in relation to each other so
to draw the air and fumes from the oxydizing chamber through the fire and up the chimney.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 22.—N° 1694.

OWLEY, Robert Kanzow.—(*A communication from David Price.*)—(*Provisional protection only.*)—
Improvements in the construction and arrangement of floral devices and in the apparatus employed therein."

This invention consists of a peculiar combination of plant or bouquet holder and water jet, the jet being so
uate and shaped in reference to the form of flower holder as to throw a sheet or thin film of water over
e holder when charged with the bouquet, thereby causing the bouquet to appear as if it were covered by a
ss shade. The holder itself consists of a hollow receptacle of metal or other suitable material, and is
vided with openings for the introduction of the plants or flowers, and is so arranged in reference to the jet
water as to exhibit its contents to the greatest advantage.

he holder may be placed in a fountain basin for the reception of the waste water of the jet if desired.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 23.—Nº 1695.

JONES, Edwin.—(*A communication from Peter Langwill and Matthew Craig.*)—" Improved shadowless " lamps."

By removing the oil vessel from under the burner to a considerable distance on one side no shadow is thrown.

They can be made for every purpose and of any design, and with flat and round wicks as required, and can be applied to chandeliers, billiard lamps, bracket lamps, hanging lamps, and the various other description of lamps.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 23.—Nº 1696.

HARROP, James John, and CORBETT, William.—" Improvements in the production of iron and steel " from ores and from waste products containing iron, as in the cases of hammer slag, forge cinder, and the " residue arising from the manufacture of sulphuric acid from iron pyrites."

This invention relates to the production of iron and steel from ores and waste products without the ordinary blast furnace process. The materials are treated with the waste product arising from the manufacture of prussiate of potash and with mineral oils. If steel be required, bone size, or other animal or nitrogenous substance is added.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 23.—Nº 1697.

HIGGINS, James.—" Improvements in machinery for spinning and doubling cotton and other fibrous " materials."

This invention relates to spinning machinery on the ring and traveller principle; and consists, firstly, in an arrangement for facilitating the piecing up after a bobbin has been doffed, Secondly, in mounting the spindles in sliding footsteps, and in causing them to run against a central roller.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 23.—Nº 1698.

FLETCHER, John.—" Improvements in revolving retorts for the manufacture and reburning of animal " charcoal."

These improvements consist of one or more flat bars or plates of suitable metal fixed in the inside of the retort longitudinally. One side of each bar is provided with a series of projecting pieces so placed as to propel the charcoal towards the discharge end of the retort. Each bar or plate has a longitudinal flange fixed to or formed on one of its edges.

For discharging the charcoal the end plate at the discharge end of the retort is furnished with one or more scoops or buckets, which pick up the charcoal when it falls into the mouth of the discharge nozzle (round which the retort revolves), whence it is discharged into the retort beneath or into the cooler, as the case may be.

The retorts may be made conical instead of cylindrical when the projecting pieces on the bars or plates would not be required.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 23.—Nº 1699.

DE RUSETT, Edwin William.—" Improvements in engines worked by steam or other motive fluid, " specially applicable to steam pumps."

The return or lifting stroke of the steam piston and pump plunger of steam pumps is produced by steam of lower pressure than that which produces the forcing stroke. For this purpose a steam chamber is employed for the return stroke, into which chamber steam is admitted so as to obtain a regulated pressure; this chamber communicates with the inner end of the steam cylinder and drives the piston and pump plunger back when the steam in the steam cylinder begins to exhaust.

Certain modes are described of fitting and actuating the valve of the steam cylinder, these modes being adapted to the new manner of producing the movements of the steam cylinder.

The invention also applies to other engines, boring engines for example, the pump barrel being dispensed with. Instead of steam any other motive fluid may be employed; if water be used the return stroke of the piston may be produced by the pressure of a column of water.

An arrangement of double action pump is also described, in which there are two steam cylinders of different diameters, the return stroke of their pistons being produced by leading the exhaust steam from the smaller cylinder to act upon the piston of the larger cylinder.

[Printed, 1*s*. Drawing.]

A.D. 1868, May 23.—N° 1700.

RD, **Thomas.**—(*Provisional protection only.*)—"Improvements in machinery for the manufacture
tube hooks or fastenings."
nvention consists of a machine for cutting off the blank, piercing the notch or shoulder, and
g and shaping the upper end of the blank so as to form an unbent gas tube hook or fastening at
ke of the machine. The blank is cut from the heated strip iron, and the notch or shoulder at the
e pierced by means of three cutting tools, two being stationay and one moveable. The cut off and
lank is carried down by the moveable cutting tool between a pair of flattening and shaping dies
he fixed die of which the blank is held by a grip. On the blank being held by the grip the moveable
g and shaping die advances horizontally and flattens and shapes the upper end of the blank and
at part of the fastening from which the hook is to be made by a subsequent process. After the
g and shaping of the upper or wide end of the blank the grip and moveable die retire, and the
made hook or fastening falls from the machine.
ed, 4d. No Drawings.]

A.D. 1868, May 23.—N° 1701.

William.—"Improvements in kilns or apparatus applicable to the drying or treating of grain for
anufacture of malt."
nvention relates to apparatus in which the grain after having been steeped or moistened in the
manner is laid upon series of trays or shelves formed in parts, or louvre pieces capable of partial
at regulated intervals; such trays or shelves being contained in double or hollow sided casings pro-
th tubes or passages heated by the products of combustion from fires, currents of air actuated by
otherwise are heated by these tubes or passages, and afterwards come in contact with and dry the
the trays or shelves. The grain is allowed to fall from one tray or shelf to another at regulated

ed, 1s. 4d. Drawings.]

A.D. 1868, May 23.—N° 1702.

RD, **Joseph Sigisbert.**—"Improved arrangements of apparatus for stopping the motions of
ng machinery and machinery for manufacturing textile fabrics when a thread breaks or a bobbin is
sted or the tension of a thread is too great."
vention consists in novel arrangements and combinations of parts to facilitate the employment of
y to stop the motions of such machines when from any cause a thread breaks or a bobbin is
d, or when the tension of a thread is too great.
thread is passed between two pieces, one of which is fixed rigidly whilst the other is fixed to a spring,
ng suitable guides to retain the thread in correct position. To each side of the spring is fixed a
piece one of which when so caused or allowed comes into contact with one or other of two fixed
pieces. This apparatus is insulated from the machine, and protected from dust or dirt, and the
pieces are connected to the opposite poles of any suitable electrical apparatus, and so long as the
mains entire and with a suitable tension the electric circuit is interrupted, but when a thread is
r exhausted or has too great a tension one of the contact pieces carried by the spring comes into
vith one or other of the fixed contact pieces and so completes the electric circuit, when the electric
y acting on any suitable apparatus stops the motions of the machine or of one part thereof.
opping apparatus employed is constructed as follows:—The armature of an electro-magnet has
hereon a hook, catch, or stop which when the circuit is broken retains a lever in position to keep a
driving wheel in gear with the machine, but when the circuit is completed the lever is released, and
acting thereon causes it to take the clutch or driving wheel out of action.
lever may have a fork formed thereon or operated thereby so as to shift the driving strap or act on
r suitable part of the machinery to stop the motion thereof.
ed, 1s. Drawing.]

A.D. 1868, May 23.—N° 1703.

, **Francis.**—(*A communication from William Fischer and Theodor Stiehl.*)—(*Provisional protection*
"An improved apparatus for causing the circulation of water in steam boilers."
vention has for its object the circulation of water in boilers and to increase the speed of boiling
g up a quantity of water and allowing it to return back into the boiler.
k formed tube immersed in the water is connected to a case containing a float which by an arrange-

ment of levers and balance weights acts on a valve placed in the top of the said case. When a small cock also fixed on the case is opened, water will rise in the tube, raising the float and through it opening the valve. Steam then entering the case the water falls back again into the boiler, and the float and valve having resumed their normal position the process is repeated.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 23.—N° 1704.

WINDHAUSEN, Carl, and BÜSSING, Heinrich.—" Improvements in chimney cowls."

We have invented a new chimney cowl, called from its principle " the deflector," in which all the defects of the known chimney cowls are done away with, being thereby distinguished from the latter. First, it has no movable parts; secondly, it has no external lid; thirdly, it allows the column of smoke to issue without injurious bendings and without reduction of its sectional area; fourthly, under all circumstances it renders the entrance of wind, rain, and the sun's rays impossible; fifthly, it compels every wind, even that descending vertically upon it, to conduce to the draft in the chimney; sixthly, it possesses an external form which is ornamental and can be easily adapted to every style of architecture; seventhly, it does not render the cleaning of the chimney difficult, and can itself be cleaned with ease. Around the top of the smoke pipe or chimney I fix the deflector proper, which is of a circular form and constructed with such a curve as to direct the wind upward when struck against. A hollow cone is hung in the centre of the smoke pipe, with its apex in the same line as the top of the same. This cone can be removed when the chimney requires cleaning. A cover surrounds the cone-deflector and chimney top, the said cover being curved parallel with the deflector, and an open screen surmounts the whole. A pipe serves to carry off any water collected in the cone. The apparatus may be constructed of metal or earthenware.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 25.—N° 1705.

BAKER, Thomas James.—" Improvements in the manufacture of wheat and other grain into flour and " in the machinery connected therewith, part of which improvements are applicable to grinding gypsum and " similar substances."

The first part of the invention is an improved feeder; this consists of a ledged table supplied with grain or granular materia which is swept at each revolution of the millstone, or oftener, or less often by a finger or fingers so that the feed is regulated exactly in proportion to the velocity of the stones.

The second part of the invention relates to the use of a blast both down the eye and around the skirt of the stones. This is accomplished by one or more fans placed either within or without the millstone case, or both within and without, so as to regulate and as far as possible equalize the pressure.

The third part of the invention consists in passing the meal down the meal spout through an elastic sleeve, by which is obtained greater power of exhaust. This exhaust is applied to the meal spout above the sleeve, but so as to draw a large quantity of air both down the back of the stones and through the eye so as to keep the stones and meal cool, the case free from hoop meal, and the stones are not clogged in working, and deliver the meal freely.

The fourth part of the invention consists in making a millstone in an improved manner. A circular metallic plate is made having rings or ledges into which the burrs are keyed and cemented, a large space is left at the eye in which there is only arms reaching to the eye and connecting the stone rings and the eye together. Upon these arms is placed a chilled iron or steel plate corrugated or cut similarly to the burr stones, leaving a space between the outer edge of the plate and the inner edge of the burrs through which the air passes. This plate is used not to grind but to bruise and prepare the material for after grinding.

[Printed 1*s*. 6*d*. Drawings.]

A.D. 1868, May 25.—N° 1706.

EVERARD, Henry William.— (*Provisional protection only*.) — " Certain improvements in articles of " wearing apparel called " braces."

The novelty of the invention consists in cutting or making the button hole in the elastic webbing or material, and covering the edges of the button hole with a binding of chamois leather or suitable material to protect the edges, the back of the webbing being strengthened with a piece of suitable leather into which the binding of the button hole is sewn through the webbing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 25.—N° 1707.

NT, Edmund.—" Improvements in obtaining motive power and in apparatus therefor."
iis invention comprises arrangements whereby steam from a low-pressure receiver or boiler is made to
ate any convenient kind of steam engine, and is then wholly or in part returned to the low-pressure
ver by means of a jet or jets of steam from a high-pressure boiler or receiver. Or a jet or jets of steam
be made to act in the passage leading from the low-pressure receiver to the engine, either in addition
instead of the jet or jets acting on the exhaust steam.
Printed, 8*d*. Drawing.]

A.D. 1868, May 25.—N° 1708.

IG, Thomas.—(*Provisional protection only*.)—" Improvements in the means or apparatus for hanging
d supporting windows, doors, shutters, and other such like moveable fittings in houses, vehicles, steam
ats, and other places or structures in which such fittings are used."
he invention is intended to supersede the present cumbrous mode by its simplicity, cheapness, and
ability.

t consists in merely cutting a groove in one or both sides of the sash or frame and inserting one or more
e rollers of india rubber or other elastic substance, which by being compressed is formed into a flat
ge and maintains the sash in any position to which it may be moved, and which in the process of moving
p or down revolves and travels in the said groove up and down with the sash.
[Printed, 4*d*. No Drawings.]

A.D. 1868, May 25.—N° 1709.

MERON, Paul.—" Improvements in ships' compasses."
he feature of novelty which constitutes this invention is the employment of a sheet or disc of steel or
magnetised according to the reed or fibre of said steel or iron for obtaining a strong directive power in
s' compasses.
[Printed, 10*d*. Drawing.]

A.D. 1868, May 25.—N° 1710.

RGREAVES, Frederick, and COLLINS, John Raistrick. — " Improvements in looms for
weaving."

The novelty consists,—

Firstly, in the application of a roller covered with india rubber or other similar substance betwixt the warp
m and the back rail geared by a train of toothed wheels with a ratchet wheel carried on a stud fixed in
loom end, to which is attached a brake pulley, and which is operated by a catch carried on or actuated
one of the lathe swords. These wheels are so arranged that change wheels may be introduced, so as to
ble the speed of the said roller to be varied as required.

Secondly, in the application of a similar roller placed betwixt the breast beam and the piece beam, on
ich is affixed or is geared to it a ratchet wheel operated by catches, so as to cause the piece to be taken up
wound on the beam as woven.
[Printed, 8*d*. Drawing.]

A.D. 1868, May 25.—N° 1711.

ITH, Sidney Ashton.—" Certain improvements applicable to carding engines."
A travelling surface is placed under the carding engine or under the doffer, main cylinder, and licker-in,
said travelling surface carrying with it the waste or fly outside the carding engine, and wrapping or
ding it up in the form of a coil or lap.
[Printed, 8*d*. Drawing.]

A.D. 1868, May 25.—N° 1712.

ARK, Alexander Melville.—(*A communication from Henry Guillemaut Despecher*.) — (*Provisional
tection only*.) — " Improvements in rotary engines or apparatus, applicable also as a pump, blower, or
iquid meter."
he apparatus consists of a cylinder, the interior of which is made of a heart shape. The cylinder is
vided with a hollow axis mounted in bearings at each end, in which axis is fitted a piston having a sliding
ion combined with the rotary motion of the axis, so as to permit of its following the curve of the steam
nber. The steam is admitted at one of the ports of a slide so as to act on the piston, and after it has
ormed half a revolution the other end of the piston receives on its opposite side the action of the steam
ther agent employed, so that there is no dead point, after which the steam is discharged.

The slide serves for reversing or stopping the engine. By coupling two apparatus together and placing the pistons at right angles the pressure on the two surfaces may be equalized and so obtain great regularity in the motion.

[Printed, 1*s*. Drawings.]

A.D. 1868, May 25.—N° 1713.

CLARK, Alexander Melville.—(*A communication from Jean Marie Chevalier, known as Charles Chevalier.*)—" Improvements in obtaining and applying motive power."

I produce motive power by the aid of one or more spiral steel springs, which I employ as a substitute for the elastic force of steam, water, air, or other fluids or material force whatsoever.

I apply the power obtained from spiral steel springs for moving all kinds of vehicles, propelling vessels or aerial apparatus, and for working machinery of all kinds.

The spiral springs are placed in barrels, toothed or otherwise gearing with toothed wheels, or the motion developed by the action of the springs may be transmitted direct by means of bands, endless chains, friction pullies, or otherwise.

The springs, two or more in number, may be contained in one or more barrels, either in groups one beside the other or superposed. The springs are fitted on a common axis, on which they are simultaneously coiled or uncoiled, brakes or other means being adopted for regulating the power obtained.

[Printed, 8*d*. Drawings.]

A.D. 1868, May 25.—N° 1714.

FERGUSON, Henry, and MULVEY, Alfred. — (*Provisional protection only.*) — "Improvements in " machinery for cutting tenons and shoulders."

According to this invention the wood to be cut or tenoned is clamped on a sliding bed plate set in a frame or standards, and is caused to travel between guides after the manner of a circular sawing machine, so as to be conducted to the tenoning irons, which consist of three sided blades formed by bending the iron at a right angle with the stem, and afterwards bending the extremity of the blade parallel with the stem, which is then secured to a drum or wheel by means of a slot cut in the stem, and by a bolt and nut. Several irons may be secured to the periphery of the drum, between a pair of which the wood is forced and the revolution of the drums cuts the tenons.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 25.—N° 1715.

KENT, William Hardy.—(*A communication from George Edwin King.*)—" Improvements in machinery " for fluting, crimping, and puffing fabrics."

According to this Provisional Specification the fabric is passed through a guide to rollers having rings of cog like teeth upon them at intervals which flute the fabric. Between these rings the fabric is in parts pressed against the surface of one of the rollers by a presser so as to fix the pleats. At other parts between the rings the guide is arranged to feed the fabric in loosely, and the rollers here set the folds, but without crushing them.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 25.—N° 1716.

JOHNSON, William Whittle, JOHNSON, Robert, and JOHNSON, Matthew Warton.—(*Provisional protection only.*)—" Improvements in the manufacture of sheets of lead, or tin, or alloys, " or compounds of these metals."

This Provisional Specification describes the imparting to the surface of sheets of lead, or tin, or alloys or compounds of these metals, a slightly roughened surface by placing a number of the sheets one abov another, with paper or other thin flexible substance having a rough surface between them and then passin them through rollers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 25.—N° 1717.

SCOFFERN, John.—" Improvements in treating paper and woven fabrics to produce therefrom wat " proof sheets and slabs."

This Provisional Specification describes immersing sheets of paper or other fabric in copperised ammon and then passing them through rollers, causing them to adhere, and thus forming a waterproof sheet slab of any thickness.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 25.—N° 1718.

S, **Joseph Ellicott**.—" Improved machinery for cutting or dressing stone."
ng the chisels or tools in a cutter head, to which a rocking motion is imparted by a crank
r toggle joint so as to cause the tool to strike in succession a number of smart blows on the
e cutter travels along.
l, 1s. Drawings.]

A.D. 1868, May 25.—N° 1719.

S, **Henri Louis Auguste**. — (*Provisional protection only.*) — " Improvements in looms for
."
oothed wheel upon the warp roller, and upon this wheel I fix a moving collar which is supported
d by a ring also fixed on the wheel. The said collar carries a pinion which gears into the toothed
l which is connected with a worm wheel geared into a worm or screw. The said screw is operated
et, which is controlled by a pawl operated by a moving rack. The latter is arranged opposite to
ried in a standard arranged to act on an inclined rod, which as the warp is unwound from the
ses the rack to travel a greater distance. The collar to which these parts are connected is operated
entric whose stroke is always the same, therefore the part carrying the rack travels the same
at each stroke though the distance between the said rack and the stop is diminished according as
is unwound. A piece at the end of a lever rests against the warp with a slight pressure. This
lted to the inclined rod, which is lowered in proportion to the diminution of the warp on the

l, 4d. No Drawings.]

A.D. 1868, May 25.—N° 1720.

É, **Hector Auguste**.—(*A communication from Benoit Charvet.*) — (*Provisional protection only.*)
vements in the construction of railway wheels, pistons, and other articles made of wrought iron."
vention relates to improvements in the construction of railway wheels, pistons, and other articles
wrought iron, and consists in employing crude iron taken direct from the puddling furnace and
g it to suitable pressure in moulds.
l, 4d. No Drawings.]

A.D. 1868, May 25.—N° 1721.

Villiam Robert.—(*Acommunication from John B. Folger.*)—" Improvements in horses' harness."
aring surfaces of saddles, collars, and pads are made of caoutchouc or its compounds. This is
ly applicable to collars and heavy saddles and pads. In lighter harness a waterproof coating is
l between the stuffing of the collar, pad, cushion, or saddle and its covering. The horse collar or
ad or cushion is furnished with a bearing surface of india rubber firmly attached to stout cloth, or
are reinforced with leather. The said collar has a cloth interposed between the bearing surface
tuffing. This lining of cloth is coated on the side next the stuffing with waterproof material.
d, 6d. Drawing.]

A.D. 1868, May 26.—N° 1722.

EE, James.—" Improved machinery for feeding carding engines."
ptation of apparatus described in Provisional Specifications dated October 4th, 1866, N° 2562, and
15th, 1867, N° 428, with an improved arrangement of driving parts to secure uniform delivery of
on an " Apperly feed," or on an ordinary feed apron of a carding engine.
d, 1s. 6d. Drawings.]

A.D. 1868, May 26.—N° 1723.

ELL, Herbert James.—" Improvements in apparatus for steering ships."
vention consists in the application of differential pulleys in connection with the hand-wheel of the
and the chain wheel of the rudder-post, so as to obtain increased leverage and perfect controul
rudder, which by this means is maintained firmly in any position unaided by the men at the

d, 1s. Drawings.]

A.D. 1868, May 26.—N° 1724.

, **John**.—" Improvements in machinery for washing or cleansing casks or barrels."
sks are caused to revolve end over end and in the direction of their circumference as well as any
iate position by the rotation of the main or driving shaft on which the machine is suspended, whilst

the centres of rotation never change, yet the cask by the action of the machinery revolves in a continuously changing position; or the cask may be caused to revolve in any desired position for any given time for the more effectual cleansing of any particular part of the interior.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 26.—N° 1725.

BROOMAN, Clinton Edgcumbe.—(*A communication from the Company or Society "Georges, Bossiere, "Desport, and Company."*)—(*Provisional protection only.*)—"Improvements in decolorizing tannin juices."

The tannin juice is decolorized without being precipitated. The gluey refuse from skins or hides in the washing operation is deprived of lime, and dissolved under heat in water of sufficient quantity to allow it to remain liquid and clear; this liquid is mixed with the liquid to be decolorized, whereby the latter loses its red color and becomes fit for tanning. Gelatinous pasty matters dissolved in water will also decolorize tannin juices. Also salt of Saturn dissolved in acidulated water, likewise kaolin, will decolorize.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 26.—N° 1726.

JOYNER, James Albert, and JENKINS, John Henry.—"An improvement in screw propellers."

The boss and blades of a screw propeller constructed according to our invention are of any usual or convenient form. Instead, however, of the outer ends or tips of the blades being left free, as heretofore has been the practice, we connect and protect them by a circular flat hoop or band, preferably of about the same width across its periphery as the blades. The said hoop or band can be cast with the blades and boss in one piece or it can be affixed by rivets or otherwise fastened.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 26.—N° 1727.

EDMESTON, Archibald, and EDMESTON, Charles.—(*Provisional protection only.*)—"Improvements in machinery or apparatus for printing hanks of yarns or threads and warps with one or more "colors."

In suitable framework are placed one, two, or more pairs of ordinary grooved printing rollers one above the other, on the shafts of which are bevil wheels gearing into bevil wheels attached to boxes fixed to a shaft driven by worm or toothed gearing, the said boxes being provided with screws for adjusting the wheels.

At the insides of the framework beyond the ends of the rollers are placed two elevating or carrying screws turned by bevil wheels, the hanks of yarns being held on rods placed in the grooves of the screws. On the top of the said screws are cams for delivering the rods with the hanks on to two brackets.

One printing roller of each pair with its corresponding color roller and colour box is mounted on sliding pedestals adjusted with screws and springs or endless chains or racks, so that when the rods with the hanks pass between the rollers the springs shall yield to allow them to pass and expand to give the required pressure for printing the colors.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 26.—N° 1728.

MACRAE, Alexander Septimus.—(*A communication from Joseph A. Veazie.*)—(*Provisional protection only.*)—"An improved process and composition for removing ink and colors from paper and dirt from rags "and other paper stock."

A saponaceous composition is first made by dissolving 12 parts of potash or an equivalent of other fixed alkali in boiling water; 14 pounds of rendered tallow or an equivalent of other fats or oils are then added, and the mixture boiled for three hours. It is then poured into a suitable vessel, and whilst cooling 25 gallons of soft water added gradually, the mass being stirred until cool, in which state it is of a brown color, and of the consistency of a stiff jelly. The proportions may be varied.

The paper to be cleaned is placed in an open or closed vessel with sufficient soft water to cover it and the mass boiled thirty minutes. While boiling 25 gallons of the saponaceous composition above described are added for every 100 gallons of water. The paper is stirred as much as possible so as to reduce it to a pulp, the ink, &c. removed as a scum, and finally the pulp is washed in clean water.

The cleaning of rags and other paper stock is conducted substantially as above described for paper.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 26.—N° 1729.

MORGAN, Jabez.—(*Provisional protection only.*)—" Improvements in apparatus for regulating the " temperature of and ventilating hot houses, conservatories, and other rooms and buildings."

This invention consists in opening and closing the windows of hot houses and other rooms by the following arrangements of parts:—In the bulb of a mercurial thermometer a metallic wire is sealed, and in the bore of the said thermometer a similar wire is sealed, or may be made capable of sliding in the bore. These wires are connected with the elements of voltaic battery, in the circuit of which is an electro-magnet. When the temperature of the hot house or room rises so that the mercury in the bore of the thermometer comes in contact with the wire in the said bore the voltaic circuit is completed, and the magnet becomes excited and attracts an armature or keeper the motion of which opens the window of the hot house or room. When the temperature of the hot house or room falls the electrical circuit is broken, and the armature being no longed attracted the window which is properly balanced returns to its closed position.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 26.—N° 1730.

WILLIAMS, John Randle.—(*Provisional protection only.*)—" Improvements in machinery for printing " and numbering sheets or rolls of paper."

1st, the printing in a web or roll and the cutting of the sheet from the web or roll before it is numbered, and without taking it out of the machine, but carrying it forward and numbering it as a sheet with any number of the same figures. 2nd, the printing of various or any number of colors on the sheet or roll; and, 3rdly, another point I claim is that I make the numbering to fall on any part of the sheet. Up to this time, to obtain this, the sheet had to be moved under the figure, By my plan the figure is moved over the sheet; and, 4thly, I claim the folding before it leaves the machine; and, 5thly, the combination of all these methods in one machine, together with the perforating, and the combination of all these methods, together with the printing from a stone cylinder or stone cylinders.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 26.—N° 1731.

SMEDLEY, Thomas.—" Improvements in brakes for carriages on common roads."

A pair of brake blocks of suitable curvature for the periphery of the hinder wheels are suspended at one end by jointed arms to the springs or to the axle, and at the other end by vertical slides working on blocks fixed at the ends of the ordinary levers for working the brakes.

By this mode of suspending the brake blocks they are caused to maintain their position in relation to the periphery of the wheels, independently of the action of the springs, which action is also unimpeded by the brake apparatus.

[Printed, 6*d.* Drawing.]

A.D. 1868, May 26.—N° 1732.

NEWTON, William Edward.—(*A communication from John Marcus Boorman.*)—" Improvements in " rotary steam and other engines."

The engine is formed of two cylinders, one placed concentrically within the other. The inner one is mounted on a hollow axle from which extend hollow curved arms communicating with valves or cocks at the periphery of the inner cylinder. When the cocks are open steam rushes from the central shaft along the curved passages into chambers formed between the inner and outer cylinders by moveable steam stops against which the steam exerts its elastic force and drives round the cylinder.

[Printed, 1*s.* Drawing.]

A.D. 1868, May 26.—N° 1733.

BUTTERY, William.—" Improvements in apparatus for turning and closing cartridges."

According to this Provisional Specification the lever which presses forward the cartridge is caused also to prevent it turning by pressing it against the interior of the tube or cylinder in which it is held.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 26.—N° 1734.

MILLER, Ivon Bruce.—(*Partly a communication from William Hartley Miller.*)—" Improvements " in the manufacture of packing for steam engines and other machinery."

This invention relates to the manufacture of packing for the stuffing boxes and pistons of steam and other engines and pumps and for other machinery, and consists principally in the employment of superposed tubes of fibrous and metallic tissue, or a combination of these kinds of tubes with the interposition or impregnation of any suitable lubricating material.

[Printed, 10*d.* Drawings.]

A.D. 1868, May 26.—N° 1735.

DEBENHAM, William Elliott.—(*Provisional protection only.*)—" Improvements in wristbands, cuffs, " collars, and other such like articles of wear."

According to this invention the shirt band is provided with a duplicate wristband or cuff which is attached to the band midway or nearly so across its width so as to present flaps, each of which may be exposed for wear by turns. Collars and other such like articles are to be made on the same principle so as to be reversible.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 26.—N° 1736.

BURTON, Bethel.—" Improvements in breech-loading fire-arms and cartridges."

The breech pin slides in a cylinder at the rear of the barrel. A mortice allows the cartridge shell to be ejected above and a cartridge to be brought up from below from a magazine. The breech pin is grooved on the outside, and is hollow, containing the hammer and spring. A finger worked by the trigger holds back the hammer and discharges it. A sliding segment and cartridge retractor are moved with the breech pin, and sectional screws hold the breech pin in place. The breech pin and parts can be drawh out behind when the finger is pulled down out of a slot in the breech pin.

The cartridge has a cylinder projecting from the base into the powder space, and in this is a gas check and a sliding needle to act on the fulminate. The fulminate is made of amorphous phosphorous and chloride of potash mixed together with dissolved gum, or applied on separate disks and pressed together by the hammer to cause the explosion.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 26.—N° 1737.

LAKE, William Robert.—(*A communication from Samuel Godfrey Reynolds.*)—" Improvements in ploughs " and other implements for cultivating land."

This invention consists in combining with a plow which has the ordinary stationary mold-board or not a revolving mold-board or a pair of revolving mold-boards geared together, such revolving mold board being placed in rear of the ploughshare and set so as to revolve as the plow is dragged through the soil in a plane which is at an angle with the axis of the plow beam. The office of such improved mold-board is to lighten the draft of the plow and more effectually turn over the soil thrown up by the ploughshare.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 26.—N° 1738.

LORD, William Barry.—" Improvements in portable filters."

This invention relates to the arrangement and combination of filters with pocket drinking flasks or other portable vessels or receptacles, a flexible tube being also combined therewith for the purpose of withdrawing the air from the flask or vessel by suction when it is placed in the water to be filtered, such tube also acting as a syphon when a continuous supply of filtered water or other fluids is required.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 26.—N° 1739.

ADKINS, William.— (*Provisional protection only.*) — " Certain improvements in stocks and dies for " screwing bolts and other like articles."

The novelty of this invention consists in making the dies on the dovetailed principle and letting them into the stock, so that they shall be level or project from it one side, the dies being held in position by a top plate and actuated by a right angular bearing plate let into a slot in the stock, the ends or sides being filled with dummy plates, the said bearing plate and dies being actuated by a regulating screw.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 26.—N° 1740.

CLARK, Alexander Melville.—(*A communication from Ambroise Dubois and Jean Joseph Poulley.*)— —" Improvements in apparatus for dressing millstones."

The apparatus is either applied to the running or bed stone at the centre, and consists of a horizontal frame on which is an adjustable head carrying an arm capable of being moved in either direction, and provided with a sliding cutter carrier. In this cutter carrier is fixed a socket containing the diamond cutter mounted in silver and held in a clip by means of a screw. A spiral spring is contained in the socket bearing on the clip, so as to allow of the diamond cutter rising to pass over any obstruction, but at same time affording sufficient pressure for the cutting desired.

The sliding motion of the cutter is produced by the aid of a ratchet or other equivalent means and handle attached to the sliding cutter carrier. By these means the cutter is traversed to and fro in the grooves for the purpose of dressing or cleaning the same.

[Printed, 1s. 8d. Drawings.]

A.D. 1868, May 26.—N° 1741.

WIRTH, FRANCIS.—(*A communication from Joseph Theodor Lossen.*)—" An improved regulator or governor " for steam and other engines."

This invention has for its object the maintainance of a regular speed in an engine by opening or closing the throttle or other valve of the same.

A vane hung on the end of a forked lever is put in motion by a toothed wheel fixed on the driving shaft of the machine and revolving between the sides of the said lever. Owing to the resistance of the air part of the power tends to disturb the axis of the vane and also the lever on which it is hung by raising it. The motion of the lever is regulated by a float immersed in water and attached to one of its ends.

When the engine is regulated at its nominal velocity the forked lever is set to lay horizontal by means of movable weights; but supposing the velocity of the engine to be increased the equilibrium is disturbed, displacing the axis of the vane, and through it the lever on which it is hung, which lever, by means of an arm fixed on its boss, communicates with the throttle valve and regulates the engine. If the velocity of the engine is diminished the equilibrium is again disturbed and the levers work in the other direction.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, May 27.—N° 1742.

DIXON, JOSEPH.—(*A communication from Aimé Durieux.*)—" An improved coupling link for railway " vehicles and other purposes."

This invention consists in a twisted coupling link, the eyes of which are formed in giving the twist.

Two or more pieces of iron or steel wire are each welded into a ring; these rings are heated to a red heat, drawn out or elongated (the one being on the other), and twisted together by means of two pins or gudgeons, which at the same time form the eyes to the exact size required without any welding.

[Printed, 8d. Drawing.]

A.D. 1868, May 27.—N° 1743.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Louis Van der Smissen.*)—" Certain improvements in the permanent way of railways."

This invention consists in the use of a sector, the object of which is to do away with the needles and consequently the counterpoint now used to operate the transfer of a train off one pair of rails on to another.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, May 27.—N° 1744.

BONNEVILLE, HENRI ADRIEN.—(*A communication from Salvatore Carcano.*)—" Improvements in " breech-loading fire-arms."

This invention relates to improvements in the construction of breech-loading fire-arms, and by means of which old fire-arms may be converted into percussion or needle guns.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, May 27.—N° 1745.

OOPER, WILLIAM.—" An improvement in sliver cans or cotton cans."

The novelty consists in constructing sliver cans or cotton cans with wrought iron bottoms.

[Printed, 4d. Drawing.]

A.D. 1868, May 27.—N° 1746.

ORRIS, JAMES.—" An improved method of and apparatus for facilitating the finishing of printed sheets of paper."

This consists in passing the sheets immediately, or as soon after as may be convenient, continuously through between and in direct contact with rolls, the surfaces of which are kept clean by whiting or other powdery substance applied thereto, and pads or other means to rub of the pulverulent substance composed of the ink and powder adhering thereto.

According to one modification two geared smooth rolls fitted with tightening screws or other means for tightening are employed, and entrances for steam or heaters are provided. A frame (or frames) for containing the powder and keeping it in contact with one or both of the rolls is used. Stationary or moveable pads, buffing or other wheels, or other mechanism are adapted to rub off the combined powder and ink.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 27.—N° 1747.

VIDIE, James.—" An improved process for the ornamentation of glass, earthenware, and other similar " materials."

The subject of this invention is the application of soluble alkaline silicates mixed or combined with metallic or earthy bases or matters, according to the nature and uses of the objects to be ornamented, to obtain at a reduced cost most beautiful designs in clear and frosted glass, and perfect imitations of opal and enamel, leaving the glass (or other material) still of its original uniform thickness, and converting it at will from the most perfect translucency to the most complete opacity.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 27.—N° 1748.

KEARSLEY, Henry, and KEARSLEY, George.—" Improvements in mowing and reaping machines."

This invention relates to grass mowing and corn reaping machines; and consists, firstly, in a novel arrangement of the working gear for actuating the cutting knife; secondly, an arrangement of a slotted lever and quadrant for lifting the guide bar; and, thirdly, in constructing the guide bar with a step or notch for the back of the knife to work in.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 27.—N° 1749.

MINES, Henry Edward.—(*Provisional protection only*.)—" Improvements applicable to register-stoves " or grates for curing smoky chimnies and controlling the draught of air."

According to this invention the stove is made with a top plate or register door in the ordinary manner, such register being generally kept closed, or nearly so, and being chiefly useful for enabling the chimney to be cleaned.

The improvements consist in cutting a space or opening in the back plate just above the level of the fire and of the width of the same, and in applying to such aperture behind the stove a tube constructed of semicircular form or bend, the two extremities pointing upwards within the chimney, but not within the brickwork, so that the smoke or products of combustion are drawn into the chimney through the tube instead of through the register. An aperture is cut in the tube to correspond with that in the back plate so as to form a tight joint.

The space between the ends of the tube and the top of the stove forms a dead stop to the down draught which returns upwards with the smoke.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 27.—N° 1750.

GRAY, Matthew.—" Improvements in the manufacture of insulated electric conductors."

The ends of the cable coated with the insulating compound are made to protrude through the sides of the vulcanizing vessel so that they shall be removed from the influence of the heat and thus prevented from undergoing the change.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 27.—N° 1751.

SCHOLL, John.—" Improvements in gas burners and in apparatus to be used in connection therewith."

This invention relates to improvements in gas burners and in apparatus to be used therewith, and consists,—

Firstly, of a guard or protector and modes of applying the same to be used in combination with a platinum or other metal gallight improver or perfector for the purpose of preventing the same from being accidentally displaced or put out of adjustment on the burner or from being accidentally bent or otherwise injured.

Secondly, of a new and special form of burner adapted or not for the reception of a platinum or other al light perfector and guard, such burner being constructed on the principle of what may be designated ouble batswing, it being provided with two or more cross slits intersecting each other and partly closed a plug in the centre of the burner.

hirdly, of a revolving smoke consumer and diffuser in the form of a ventilating fan or otherwise isted over the flame of any gas burner in order that by reason of the elevated temperature it attains it consume the smoke arising from imperfect combustion.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 28.—N° 1752.

IDY, James.—"An improved pick or pickaxe for excavating, mining, and other purposes."

y the introduction of a socket introduced at the end of each pick so that the points, being made of cast l to the full length required can be put in and taken out at pleasure.

[Printed, 6*d*. Drawing.]

A.D. 1868, May 28.—N° 1753.

AILEY, Henry, and BAILEY, Frederick.—"An improvement in the manufacture of valves for the passage of air, water, or any other liquid or fluid."

The *body* of the valve may be made of any of the usual forms, and with any suitable number of nnections.

In one side thereof (by preference the upper side or top) immediately opposite to the valve seat is formed opening of rather larger diameter than the valve itself, and having a screw thread in its interior circum- ence; into this opening is screwed a cover having an octagonal or other suitably formed collar; through the tre of this cover passes the valve spindle, the upper part thereof working through a stuffing box, and its er part being screwed with a square thread and working through a screwed nut. The upper end of the ndle is provided with a wheel or handle for turning the same, so as to open or close the valve, which ter is attached to the lower extremity of the spindle.

The valve is provided with three or more straight guides working inside the seat to keep the former in its oper position.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 28.—N° 1754.

ELL, Richard, and BARLOW, Robert.—"Improvements in apparatus for preventing waste of water in or from waterclosets and drinking fountains, cisterns, tanks, and other like receptacles."

This invention consists,—

1st. Of a three way cock combined with an air vessel and with the service pipe for preventing waste of ater in closets and drinking fountains, by admitting only the water from the air vessel to pass down the oset at each pull of the handle.

2nd. Of an equilibrum self acting float valve for cisterns or tanks to prevent overflowing; a piston tached to the valve spindle and working in a closed cylindrical chamber above the valve serving to balance e pressure on the valve itself.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 28.—N° 1755.

ALZIEL, William.—"An improved combination of cock and valve for controlling the flow of water from constant supply pipes."

My invention of an improved combination of cock and valve for controlling the flow of water from constant pply pipes consists of an arrangement of a cock with two cylinders of different diameters placed vertically er the aforesaid cock, the larger cylinder being next to the cock, the smaller being placed above and ncentric with the larger. In those cylinders are placed two pistons fixed upon the same rod, the end of e smaller piston forming a valve, which valve travels to the extreme end of the smaller cylinder, at which d there is two pipes connected, but so constructed that when the valve on the small piston is forced to e extreme end of the small cylinder closes the communication between those two pipes, the one being the let, the other the outlet. This is done by the construction of the cock, it being so made that by having the ag in a certain position you admit a small jet of water under the piston of the large cylinder, and during the ne this small jet is flowing into the large cylinder, water is flowing through the nozzle of the cock untill e valve on the small piston stops the communication between the inlet and outlet pipes. By reversing the ug a quarter turn you cut off the supply from the supply pipe and the larger cylinder, and at the same ne open a communication between the larger cylinder and nozzle, so as to allow the discharge of the accumulated water through the nozzle from the larger cylinder. The pressure from the constant supply pipe acting upon the small piston and so opening the communication between the supply and discharge, which by returning the plug a quarter turn you again have a flow untill the valve on the small cylinder is closed, and so on as often as you please.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 28.—Nº 1756.

ALEXANDER, William. — (*Provisional protection only.*) — "Improvements in the arrangement of "mechanism for applying auxiliary power to sailing ships."

The steam winch, winding engine, or other motor is employed to give motion to a lying shaft placed (a) under the deck near the beams thereof; (b), partly over and partly under the deck; and (c), over the deck altogether.

Ordinary paddle wheels, or paddle wheels with reefing floats or boards, are attachable to and removable from the said shaft at pleasure. Making side paddle wheels removeable is an essential feature of the invention.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 28.—Nº 1757.

DRAKE, Thomas. — "A machine or apparatus to be employed for receiving communications, orders, "messages, and appointments."

The novelty consists,—

Of a box containing two rollers and a table passing through an aperture in the lid so that strips of paper wound upon one roller may be passed over the table to and wound upon the other roller by turning the latter, and prevented being turned the wrong way by means of a ratchet wheel and a catch.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 28.—Nº 1758.

HAUDUCŒUR, François.—(*Provisional protection only.*) — "An improved apparatus for malaxating "butter."

This apparatus consists of two pairs of wooden cylinders, the upper ones being partly channeled, the lower ones smooth; the butter is supplied to the cylinders through a hopper, and a trough or tub receives it from the cylinders; in this trough or tub rotates a vertical axle provided with helical flyers or arms.

A reservoir is placed above the apparatus for obtaining a current of water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 28.—Nº 1759.

NEWTON, William Edward. — (*A communication from A. W. Coates.*) — "Improvements in horse "rakes."

The combination with a vibrating rake of a toggle arm and upright.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 28.—Nº 1760.

NEWTON, William Edward.—(*A communication from William Sylvanus Haight.*) — (*Provisional protection only.*)—" Improved apparatus for hopping beer."

Arranging a rotary stirrer in a hopping apparatus between two perforated shelves and provided with a discharge pipe and overflow pipe.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 28.—Nº 1761.

GREENWOOD, Thomas.—(*Partly a communication from Auguste Veillon.*)—" Improvements in machinery "for assorting the fibres of dressed silk."

This invention relates to a novel arrangement of machinery for assorting the fibres of dressed silk, the object being to select the longest fibres from the stricks of silk and form them into a lap or sliver ready for the combing operation.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, May 28.—Nº 1762.

PALMER, Jarvis, and PALMER, James Brecknock.—(*Partly a communication from Rudolf Hermann and partly the invention of James Brecknock Palmer.*)— " Improvements in the manufacture of matches "and fusees, and of friction surfaces to be used therewith."

This Provisional Specification describes an igniting composition for matches and fusees composed of hyposulphite of lead or other hyposulphite, with by preference chlorate of potash and pyrolusite, to which may be added oxide of iron and chrome yellow.

In making safety matches and fusees and their rubbing surface the hyposulphite is omitted from the matches or fusees and is combined with the rubbing surface.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 28.—N° 1763.

HAMBLING, Jeremiah Robert.—"Improvements in thrashing machines."

According to this Provisional Specification the crop to be thrashed is placed upon a table, and it is then raked forward to the beating drum by endless chains or bands having teeth upon them.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 28.—N° 1764.

BENTHAM, Robert Hunter.—"Improved apparatus for facilitating the flow of liquids from barrels or "other closed vessels, and for lifting or forcing liquids to any desired height."

The novelty of this invention consists in forcing air into an elastic or compressible bag placed in a barrel or other closed vessel for expelling the liquid therefrom. Bellows are used for inflating the bag or compressing air thereinto.

[Printed, 8*d.* Drawing.]

A.D. 1868, May 28.—N° 1765.

SHORE, Thomas, EASTWOOD, John, and BREALEY, William Woodhouse.—(*Provisional protection only.*)—"Improvements in steam generators and in apparatus for heating the feed water therefor."

This invention consists in adding a small steam generator to the level of an ordinary boiler, such generator being provided with two tubular extensions, which extend along each side flue on opposite sides of the boiler. This generator is provided with a steam dome, which is in communication with the steam dome on the main boiler through a pipe for that purpose. The feed water either enters direct into the small generator, where it is heated by the waste heat in the fues of the boiler, or it passes through a pipe which is carried entirely through the hot water in the small generator, and derives heat therefrom, and finally enters the front end of the boiler.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 28.—N° 1766.

HORN, Thomas Story.—"Improvements in miners' safety lamps."

This invention relates to a means of obtaining an increased amount of light and more perfect combustion in miners' safety lamps; also to an improved lock for fastening all the parts of the improved lamp together.

Above the oil receptacle and permanently attached to it there is an air chamber perforated round the circumference for the admission of air horizontally at a point below the point of combustion. The top plate of this air chamber is also perforated with very fine holes for the admission of the air to a combustion chamber which surrounds the wick and is formed of metal of a dome or other shape having an aperture at the summit, through which the wick can pass. This metal dome is fitted by a bayonet joint screw or other means into a metal ring or flange, which flange has formed on its outer or upper surface an annular groove for the reception of a glass chimney, which is cemented therein. The dome also acts as an extinguisher should the lamp be either overturned by accident or otherwise, the light in that case immediately dieing out. The products of combustion pass up the glass chimney through a contracted aperture in a metal cone fitted thereon, and becomes diffused by escaping through small perforations in a copper cap fitting on the glass chimney. A guard of metal or other suitable material may, if desired, surround the apertures in the circumference of the air chamber and serve as a protection against any sudden gust, blow, or outburst of gas or air interfering with the steadiness of the light. As a protection to the glass chimney from breakage a wire cage is placed on the exterior so as to surround the same. With a view to locking the lamp there is drilled in the top rim and bottom flange an aperture, which extends also into the solid part of the side of the air chamber, the drilling being of course in a line, so as to admit of a steel rod passing through from top to bottom. On the top rim there is rivetted a metal tongue, which is bored to admit of a screw bolt, and on the top cover there is rivetted another and larger piece of metal, having a slit for the passage of the former piece, this larger piece being also bored partially through for the passage of the said screw bolt. This bolt is so fixed as not to be capable of entire withdrawal. On bringing the cover down the metal tongue enters the lock on the cover, and the bolt is then screwed by a key through both pieces, thereby locking the lamp. The cover by covering the the head of the steel rods keeps it in place, and the lower end of the steel rod by passing through the lower flange into the solid piece bel prevents the base from being unscrewed.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 28.—N° 1767.

HAINES, Hiram.—(*A communication from William Anthony Shaw.*)—"Improvements in the manu-"facture of lead pipe, and lead pipe lined or cased with tin or other metal, and in the machinery "employed in such manufacture."

A uniform thickness of the respective metals through the entire length of pipe is ensured by so forming, proportioning, and arranging the different metals with respect to each in preparing the charges as to cause them to issue through the die in their proper relative proportion and of uniform thickness through the entire length of the coil, notwithstanding the tendency of the two metals to change their relative forms in the cylinder under the operation of the applied power. I make the charge of metal in three distinct parts, and unite them either before or after they are put in the cylinder. The central ingot or charge of tin is made in the form of a single or double frustrum of a cone, and I combine the same with an intermediate lead or alloy ingot of like form. The said intermediate frustrum may be made of some alloy which melts at a higher temperature than tin or lead. I form cavities in the upper end of the charge to allow the metal to spread. I form the metallic pipe or tube by forcing two or more of the metals together simultaneously out of two retaining cylinders and through two dies by means of a ram or rams over one core or mandrel. The metal is disposed in two or three separate cylinders or receptacles. The metallic pipe may consist of three tubes of soft metal, such as a tube of lead pressed between two tubes of tin simultaneously pressed together by combining all three of the said metals in the form of separate ingots in one retaining cylinder, and by forcing them out of the said cylinder through a die by means of a ram over a mandrel. The shank of the mandrel is rigidly connected to the same in a cavity made in the bottom of the ram deep enough to allow mandrel to spring and adjust itself in the centre of the die. The mandrel may be connected to the ram by the interposition of a flexible link. A cup may be used in combination with the ram of the pipe press to facilitate the connection between the ram and the mandrel.

[Printed, 1*s*. Drawings.]

A.D. 1868, May 29.—N° 1768.

GISBORNE, Frederic Newton.—"Improvements in apparatus for signalling on board ship and in "other places."

The invention relates to a mechanical signal to be operated by connecting chains, cords, wires, or shafting. Two dials are employed made of metal, glass, or other suitable material, upon which the necessary orders are painted or engraved, the section allotted to each order being equally subdivided, but differently colored, say black and red.

The pointers which traverse around the centres of these dials are fixed to the axis of a pair of pullies so geared by chain, wire, cord, or shafting as to move in unison. One of these dials adapted (for example) to an engine room "indicator," carries a slip hammer bell to attract attention to the order given, the other adapted to the captain's bridge "communicator" carries an additional pointer (countersunk by preference like the seconds' hand of some watches) which is connected by a pulley to the engine shaft in such manner that it indicates upon the bridge instrument the speed and movements of the engine "ahead" or "astern."

In connection with the foregoing indicator a ratchet wheel is employed which is attached to the pulley which carries the pointer; also a spring catch or driver which, when the pulley acts upon the said ratchet wheel, and thus moves the pointer and any other pointer geared to move in unison with it over a given space.

The engineer is enabled to advance the pointers of both indicator and communicator, from the black t the red subdivisions appertaining to each order, and by so doing repeats and acknowledges such order.

The telltale already described also confirms its due fulfilment and thereby prevents error.

By the foregoing arrangement it will be seen that but one chain, wire, cord or shaft, and one pair pullies are required for both transmitting the order and receiving the reply.

The invention is also equally applicable to steering with rudder "telltale," gunnery, or other signals.

Secondly, the invention relates to a mechanical signal to be moved by a column of air.

Two dials are employed, as already described, behind the first or "indicator" dial adapted (for exampl to steering signals. A pair of small cylinders are employed fitted with pistons, the plungers or valves bei air tight or nearly so. These cylinders are connected by piping to a similar pair placed behind the secon or "communicator" dial, and in both instances the pistons appertaining to each pair of cylinders a

ed by racks. Small toothed wheels are geared so as to be moved by the racks, and these toothed
carry the pointers. The communicator is provided with a transmitting handle which acts upon
ons by a second toothed wheel geared to act upon the rack, and the indicator is provided with a
ger also attached to a second cog wheel [*geared**] to act upon its rack. The effect being that a
nt of the transmitting handle of the communicator creates a pressure upon the column of air within
of cylinders and piping, while it rarifies the air in the other set. The pistons in the indicator at
pond in their endeavour to restore equilibrium of pressure, thus setting the pointers in motion and
n.

nilar arrangement in connection with the rudder head, for instance, acts as a telltale upon the
ommunicator.

be readily understood that this movement is equally applicable to engine room, gunnery, or other

ed, 10*d*. Drawing.]

A.D. 1868, May 29.—N° 1769.

EAN, WALTER.—" A new or improved process to be used for producing or depicting designs on
le fabrics."

feature of novelty which constitutes this invention is the production of designs on cloth so as to
appearance of being photographed. The design in this case requires to be bitten somewhat deeper
al by the acid on the plate; the aquatint is inked in the ordinary manner, and an impression is
erefrom on thick plate paper coated with Indian corn flour. This impression after being properly
is transferred to the cloth by suitable pressure.

ed, 4*d*. No Drawings.]

A.D. 1868, May 29.—N° 1770.

ULL, JAMES. — " Improvements in connecting and disconnecting carriages and wagons on
ys, and in the apparatus connected therewith."

ature of novelty which constitutes this invention is the disconnecting or connecting of vehicles on
by means of levers arranged parellel with the sides of said vehicles, so that the attendant does not
o go in between the vehicles for the purpose.

ted, 1*s*. Drawing.]

A.D. 1868, May 29.—N° 1771.

LE, JOHN, and RAWORTH, JOHN SMITH.—" Certain improvements in machinery for the
facture of roll or twist tobacco."

nvention consists of a combination of feed rollers and an apparatus for twisting the tobacco leaf,
apparatus for covering the same with an outer coating or wrapper of tobacco leaf. Brushes are
to spread out the wrapper leaf. The roll of tobacco is wound on a bobbin by means of com-
. In the finer kinds of twist a needle is used to deliver the tobacco to the bobbin.

ted, 3*s*. Drawings.]

A.D. 1868, May 29.—N° 1772.

THS, HENRY, and WISHART, FREDERICK AUGUSTUS.—" Improvements in means or apparatus
earing or cutting the hair of horses and other animals."

g the hair of horses and other animals with revolving spiral cutters on a cutting bar or knife
omb attached thereto. Also the use of the same cutting bar or knife and comb with a moveable
ife working on a pivot or fulcrum over the same with a partially circular motion. Also the use of
cutting bar and comb in combination with a pivoted knife working over the same in a partially
guide so as to cut like a draw knife.

ower of adjusting these machines to cut any length of hair to any required degree of closeness.

pplicability of either hand, steam, or other power to work the machines.

ed, 10*d*. Drawing.]

A.D. 1868, May 29.—N° 1773.

ER, JOHN BATEMAN.—(*Provisional protection only.*)—" An improved machine for sifting pulverized
o in the manufacture of snuff."

ting screen of cylindrical, polygonal, or other form is supported in framework, preferably in an

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ord " geared " is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original
nt.

inclined position. The wire gauze circumference or outline of such screen is of uniform size all over or sections are of different sizes, thereby to obtain one or more qualities as regards fineness of division. The pulverized tobacco is fed at the higher end. In or near the receptacle at the lower end for receiving the rough tobacco I place a magnet. The whole machine is enclosed in a case.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 29.—Nº 1774.

NEWTON, Edward.—(*Provisional protection only.*)—" Improvements in the means of and apparatus for " obtaining and applying motive power."

According to this invention nitro-glycerine or other similar composition of nitric acid, sulphuric acid, and glycerine oil is used as an agent to generate power in an apparatus consisting of a cylinder and piston, each end of the cylinder being provided with a solid block of cast steel or other durable metal, containing cups, into which the nitro-glycerine is conveyed by tubes; the surfaces of the piston have projections thereon which alternately strike the cups and thereby discharge the nitro-glycerine, the explosion of which gives motion to the piston, and such motion may then be transmitted by gearing to useful purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 29.—Nº 1775.

NUELLENS, Julius, and NEUHAUS, Matthias.—" Improvements in portable apparatus for cooling " wine or other liquids in bottles or other like receptacles."

The apparatus is provided with a water tight cover, preferably consisting of a vulcanized india rubber diaphragm which has a hole in its centre to pass over the bottle neck. The cover is fastened down to the top of the apparatus, which can then be tilted without any water escaping ; thus the contents of the bottle can be poured out without removing it from the apparatus. The apparatus is supported by trunnions on a stand which may have rollers to run upon.

[Printed, 10*d.* Drawing.]

A.D. 1868, May 29.—Nº 1776.

HAMEL, Leopold.—(*Provisional protection only.*)—" Improvements in instruments for clipping lace and " other fabrics."

This Provisional Specification describes pivotting a pair of supplemental blades to the under sides of the blades of a pair of scissorlike instruments, one to each and at a short distance in advance of the main pivot, the supplemental blades are also pivotted together beyond the extremities of the main blades.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 29.—Nº 1777.

BOUSFIELD, George Tomlinson.—(*A communication from Marshall Forbes.*)—" Improvements in " plating spoons and other articles with a coating metal, and in apparatus employed therein."

The object of the invention is to coat spoons and similar articles with a plating or covering metal in such manner that the thickness of the plating metal shall vary at different parts of the articles as desired, the thickness being greatest upon the parts most exposed to wear. To this end this invention consists of the method of coating the article unequally in the desired manner by immersing different portions of such article for different periods in the depositing bath of an electro-plating apparatus with which said article is connected, whereby the parts which are immersed for the longest period have the plating metal deposited thickest upon them.

The invention consists further of the combination of a holder adapted to confine the articles to be coated with regulating mechanism by means of which the articles may be partially immersed to the required extent in the depositing bath.

The invention consists further of the combination of said holder (adapted to confine the articles to be coated) with mechanism by means of which it may be tilted for the purpose of varying the extent to which the articles are partially immersed in the depositing bath.

[Printed, 1*s.* Drawings.]

A.D. 1868, May 29.—Nº 1778.

BUCHAN, Patrick.—" Improvements in the preparation of hemp and flax."

The flax and hemp is boiled in a solution of sulphuret of sodium or potassium ; then treated in succession with a bath of permangamate of potass, of dilute sulphuric acid, of sulphite of sodium, of dilute sulphuric acid, and of boiled soap. The fibre is then dried and subjected to the action of crushing rollers.

[Printed, 4*d.* No Drawings.]

A.D. 1868, May 30.—N° 1779.

EVILLE, Henri Adrien.—(*A communication from Elliot G. Storke.*)—"Improvements in machines tching or sewing the edges of button, eyelet, and other holes in cloth, leather, and other materials, or stitching or sewing the edges of cloth, leather, and other materials generally."

nvention relates to machines for stitching or sewing the edges of button, eyelet, and other holes in ather, and other materials, and for stitching or sewing the edges of cloth, leather, and other materials r, which from their peculiar construction and arrangement will enable an ordinary sewing machine, ey are properly attached thereto, to be used for button holes and other similar sewing or stitching, n their removal to be used for ordinary sewing or stitching.

ed, 10*d*. Drawing.]

A.D. 1868, May 30.—N° 1780.

, Alexander.—(*A communication from Robert Smith.*)—(*Provisional protection only.*)—"Improves in apparatus for the manufacture of sugar."

apparatus comprises a series of clarifying and evaporating pans composing what is termed a battery, ich are made of rectangular forms, and are arranged in line upon two brick walls, the space between alls and under the pans forming a flue for the passage of the fire gases from a furnace to heat the pans. ttoms of the pans are formed with corrugations to increase the heating surface, and these corrugations osed across the flue for the fire gases to strike against them. A montejus or discharger is provided ection with the lowest evaporating pan, such discharger being a closed vessel, which is made to operate imp by the alternate introduction and condensation of steam.

nvention also comprises a vacuum pan which is heated by means of tubes fixed in the bottom and heir upper ends closed. A steam chamber is formed under the bottom and steam has access thereby iteriors of the tubes.

ted, 4*d*. No Drawings.]

A.D. 1868, May 30.—N° 1781.

Y, Robert.—"Improvements in the construction and mode of working hydrostatic presses and ulic machinery."

first part of my invention consists in certain improvements upon the hydraulic presses for which Patent were granted to me on the 10th January 1863, N° 87.

ndly, in an improved arrangement of baling boxes for baling presses.

lly, in partially or totally relieving stop valves of the pressure on them, or loading them by a plunger l to the fluid under pressure.

thly, in an improved hydraulic double acting balanced slide valve.

ly, in an improved compound balanced hydraulic slide valve.

ly, in an improved mode of loading safety valves for hydraulic machinery.

nthly, in the combination of the valves fifthly and sixthly referred to, and a suction valve or

thly, in an improved arrangement of pumps, valves, and cylinders for forging, shearing, and otherwise ng on metals; and,

hly, in the application of elastic substances for preventing shocks in hydraulic machinery.

ted, 1*s*. 10*d*. Drawings.]

A.D. 1868, May 30.—N° 1782.

OW, Taylor, and KEITH, Samuel.—(*Provisional protection only.*)—"Improvements in weaving in the machinery or apparatus employed therefor."

feature of novelty which constitutes this invention is, the placing of the warp on bobbins, each of re carried by a shuttle; the shuttles and bobbins being arranged in circles round a conical or other block, the shap of the cone or block determining the shape of the cap when woven.

ated, 4*d*. No Drawings.]

A.D. 1868, May 30.—N° 1783.

T, Sir Ivor Bertie.—"Improved apparatus for cutting or trimming the edges of lawns or grass "

llow cylinder or roller is provided with framing and handles. The side of the framing is provided plate or guide for holding and guiding an adjustable slotted bar, or a fixed bar may be used. To this air of shears or knives is secured, the lower blade of which is fixed to the bar, and may be provided with a tray for receiving the cut grass. The upper blade of the shears is actuated by means of an adjustable arm or connecting rod worked by a crank, cam, or eccentric, to which motion is imparted from the hollow cylinder or roller through suitable gearing. The invention is applicable to garden rollers and lawn mowers of ordinary constructions.

[Printed, 10*d*. Drawing.]

A.D. 1868, May 30.—N° 1784.

HARMAN, John.—" A new or improved drawing board for the purpose of stretching drawing paper."

The novelty of the invention is as follows, viz^{t}.:—

1st. It supersedes the necessity for the use of pins, glue, paste, or wooden margin.

2nd. The paper is drawn tightly over the edges of the board by means of the separate pieces which are made to form a frame at the back of the drawing board.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 30.—N° 1785.

HIRZEL, Heinrich.—(*Provisional protection only.*)—" Improvements in the production of inflammable " gas, and in apparatus to be used therefor."

This invention consists in mechanical arrangements for pumping petroleum and petroleum residue into retorts heated to a red heat in a continuous jet. A pump is provided to each retort, and is furnished with a water-tight piston, the rod of which is attached to a cord which passes round pulleys in combination with clockwork mechanism, and is held in a vertical position by a guide. The clockwork being wound up draws up the piston, when the oil flows from the cistern in which it is contained into the barrel in which the piston works. The pump-rod is charged with weights, and when the clockwork is set in motion the piston rod forces the oil through the feed tubes into the retort.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 30.—N° 1786.

SPARTALI, Nicholas Demetrius.—(*Provisional protection only.*)—" Improved apparatus for consuming " hydrocarbon oils in the furnaces of marine and other boilers."

Below a hearth or set of fire bars a shallow pan is placed to receive hydro-carbon oil which is ignited. Jets of air are discharged into the flame below the fire bars and mingling therewith a bed of clear flames is produced above the bars or hearth.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 30.—N° 1787.

HARRIS, Isaac Blue.—(*Provisional protection only.*)—" Improvements in pumps for actuating the pulp " in paper-making machines."

The bellows or pump is formed of tubes of leather connected together by a collapsible joint.

[Printed, 4*d*. No Drawings.]

A.D. 1868, May 30.—N° 1788.

CHAVAGNAT, Michel.—"Improvements in the means or apparatus for closing and securing vessels containing liquids especially applicable to those holding petroleum, light oil of schist, and other volatile, " explosive, and dangerous liquids."

The vessel is provided with an aperture on which a stopper made preferably of leather is free to rest, and which when thereon hermetically closes the aperture. The leather is united to a metal disc carried by a rod or lever jointed to and having its fulcrum on the vessel, and flattened at the other end to facilitate the pressure of a finger thereon, a spring the upper part of which takes into an aperture formed at the finger end of the lever, and at its lower is secured to the vessel containing the liquid, so that the spring has always a tendency to press the stopper into or on to the aperture or opening in the vessel for containing the volatile liquid. To open the aperture the lever is pressed in the contrary direction, and the spring passing through the lever tends to keep the vessel open until the lever is again pressed.

[Printed, 8*d*. Drawing.]

A.D. 1868, May 30.—N° 1789.

TURNER, Richard.—(*Provisional protection only.*)—" Improvements in the manufacture of umbrellas."

The features of novelty in this invention consist in having the umbrellas circular, in form like the Indian sun shades, or of any other suitable shape, round which a groove is formed for catching and carrying off the rain by means of an outlet made in the groove at one side of the umbrella.

A.D. 1868, June 1.—N° 1794.

WALKER, Samuel.—" Improvements in watches or other pocket timekeepers."

The object which I have had in view in devising and perfecting the various novel constructions, combinations, arrangements, and modifications of parts hereafter referred to under five distinct heads, has been to provide accurate timekeepers of desireable and ordinary pocket sizes which require winding less frequently than the reliable watches now in use, say winding once a week instead of every day.

First. For the purpose of obtaining power sufficient to drive for the longer period I make the mainspring and its barrel deeper and larger than in thirty hour watches of the same size. To allow that to be done I carry the one end of the barrel through the pillar plate, and form a recess for the other end in the potance plate. And to secure the barrel arbor I attach to the pillar plate a transverse bar formed with a polygonal, oval, or other opening therein; the barrel arbor is passed therethrough and held thereby, the usual ratchet wheel and click being dispensed with.

Second. With the object of effectively utilizing the power stored up in the spring, of causing it to act with uniform energy as well when nearly run down as when newly wound up, and of rendering the parts more durable. I construct the fusee of larger size than those in thirty hour watches of the same size. The greatest diameter of the fusee is equal to that of the main or first wheel. And that the power from the mainspring may act directly on the pinion of the second wheel I lead the chain from the fusee to the barrel from the inside instead of from the outside as hitherto has been the practice. The main wheel is made, for strength, of bell metal, and it works in a recess in the pillar plate.

Third. The wheels and pinions composing the train by which motion is conveyed from the first wheel are disposed nearer to the circumference of the plates than formerly, and most of them operate in recesses. The seconds' wheel too is placed near the circumference, so at to enable the watch to be made of the desired flatness. The number of the teeth of the wheels and the leaves of the pinions composing the train may be varied, but in all cases, and this is a most important feature of my invention, the 'scape wheel must not have less than sixteen nor more than twenty-two teeth. I prefer a moderate train thus: main or first wheel, 72 pinion 12; second wheel, 60 pinion 12; third wheel, 60 pinion 8; fourth wheel, 64 pinion 8; and fifth or seconds' wheel, 60, and pinion 8.

Fourth. An escapement of great strength, consequenty not liable to get out of order when in wear nor during cleaning, working with minimum friction, is provided by making the limbs of the pallets of a wedge shape and the 'scape wheel with club teeth. The incline of the club teeth act to "drive;" the number of teeth I prefer is nineteen.

Fifth. Another construction of escapement working with inconsiderable friction is provided by reducing the length of drive; that is to say, reducing the width or thickness of the limbs of the pallets and constructing the driving surfaces at an increased angle.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 1.—N° 1795.

FARRAR, Jabez Bunting.—" Improvements in or applicable to machinery or apparatus for spinning or " twisting fibrous substances."

The novelty consists in,—

The application of a washer of any absorbent substance, saturated with oil or other lubricant, with a cover over it, on each stud or spindle, in cup frames resting on the top rail and in cap and flyer frames resting on the lifter rail, and either with or without a hardened metal washer.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 1.—N° 1796.

JONES, David.—" Improvements in furnaces and heating apparatus having reference to the consumption " or prevention of smoke."

Constructing furnaces, &c. in such manner that the smoke and unconsumed gasses being made to pass and repass through the incandescent fuel are thereby thoroughly consumed.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 1.—N° 1797.

REED, George Potter.—(*Provisional protection only*.)—" Improvements in watches."

This invention relates to improvements in the construction of watches, and embraces several distinct features, one of which consists in fixing the barrel immovably to the pillar plate by means of a flange formed thereon, and by screws inserted in the pillar plate, whose heads overlap the said flange, the open end of the barrel extending through the pillar plate, and being covered by the main gear wheel. By this peculiar mode ture above that of boiling water; otherwise the first or heating bath must be of such nature that it will not be incompatible chemically with the impregnating substance. There may also be only one immersing tank. When the wood has been long enough in the hot liquid the liquid may be drawn off and its place supplied by the cold liquid, or the hot liquid may be cooled or allowed to cool. The process is especially useful for impregnating wood with crude carbolic acid and with dead oil.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 2.—Nº 1801.

VAUGHAN, Edward Primerose Howard.—(*A communication from Robert Breckenridge Baker and Charles James Adolphus Dick.*)—"Improvements in apparatus for preventing incrustation in steam boilers."

This invention consists of improvements upon an invention of "An improved mode of and apparatus for "preventing incrustation in steam boilers," for which Letters Patent, bearing date the 15th day of September 1864, Nº 2252, were granted to Alfred Vincent Newton as a communication from George Inny Parry, and which consisted in placing metallic points within the steam space, and in electrical communication with the shell of the boiler. The present invention consists in the use of carbonaceous material instead of metallic points, such carbonaceous material being placed in the steam space of the boiler and in electrical communication with the shell thereof in the same manner as the metallic points.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 2.—Nº 1802.

TATE, James.—(*Provisional protection only.*)—"A new or improved method of manufacturing points "for railways."

Heretofore the points for railways have been made at great expense and trouble from ordinary rails either by cutting them down while hot or by planing them with a machine. This invention consists in casting the points in moulds, and which may be made of any shape most preferred. In this way the points are cast ready for use. The metal preferred to be employed is steel or maleable cast iron.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 2.—Nº 1803.

CHRISTY, Thomas.—"Improvements in paper satining machines."

These improvements relate to a class of machines used for imparting a polish or finish to paper by means of rotary brushes, and commonly known as paper satining machines. The paper is wound from a roller upon polished metal pressure rollers, and is pressed against a rotating brush which moves in the same direction but at a quicker speed than the said rollers. Rollers loose in their bearings are provided to raise the paper from the brush after it has passed under the pressure rollers. After passing through the machine the paper is received upon a roller which may be operated by hand or otherwise. The pressure rollers may be adjusted by set screws.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 2.—Nº 1804.

OAKDEN, Joseph, and PICKIN, Joseph.—(*Provisional protection only.*)—"A new or improved "material for enamelling iron so as to prevent corrosion and incrustation."

Marle, taken from the bank of the river Dane, known as Dane marle, is mixed with an equal quantity of borax, and they are ground and fused together. The iron to be enamelled is covered therewith and exposed to great heat in a furnace.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 2.—Nº 1805.

AVERY, Joseph.—"An improvement in apparatus employed in raising and lowering Venetian blinds and "in retaining them in position."

The improvement relates to apparatus used in connection with Venetian blinds, in which the lifting and lowering cords are passed over guide pulleys carried by the upper ends of levers, and are thence conducted downwards between the lower or tail ends of such levers and the box or bracket supporting their axes of motion, so that when the blind has been raised to its required position, and the pull on the lifting cords is removed, the tendency of the weight of the blind is to cause the tail ends of the levers to nip the cords sufficiently to hold the blind in the position required, the releasing of the lifting cords for the lowering of the blind being effected by drawing on a check cord attached to a saddle sliding on the tail ends of the levers.

The improvement consists in rendering the operation of this check cord more efficient and easy of action y substituting for the saddle, which by its sliding is least efficient when most power is required, a cross iece which is received into the ends of loops or eyes in the tail ends of the levers, by which the power xerted is more uniformly operative and great facility is afforded in operating the blinds.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 2.—N° 1806.

IURE, Louis Germain.—(*Provisional protection only.*)—"Improved fishing apparatus."

The features of novelty in this invention consist in having the line or hook carriers of a rectangular form nd fitted with a metal cap at each end, in the centre of which is a hollow space, which is filled up with a iece of cork in which the hooks are fixed; these are protected by a flat metal band working on a hinge at ne end, and having a hasp at the other.

The gut or horse hair lines, as well as that on which the hooks are fixed, are wound or passed in and out f a succession of openings made on the sides of the carriers; the ends of the lines being previously evenly ollected are passed in a hank or skein through the openings alternately till they are completely wound up.

These carriers may be made of wood, pasteboard, or other substance, and protected by a case of skin, leather, or other material, and furnished with an opening at one end, through which to withdraw the lines, which by this system can be withdrawn singly without entangling those remaining on the winder or arrier.

These winders may be simple or combined, that is to say, they may simply carry lines or hooks independently; in the former case there is no necessity for the cap and metal band, and in the latter a metal ferrule s employed, round which are a number of notches for the reception of the hooks; these as before are protected by a metal band.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 2.—N° 1807.

LILLIE, George Arthur Howard.—"Improvements in street paving."

This invention consists in placing the paving stones in lines from three to four or more inches apart, and filling up the intervals with small stones, granite, or other suitable material cemented together and consolidated by bituminous or other cement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 2.—N° 1808.

NEWTON, William Edward.—(*A communication from Julius Hietel, John Wenzel Hietel, and John L. Geissler.*)—"Improvements in lever escapements for watches or timekeepers."

Constructing the lever of a watch escapement of two arms, which are connected at their outer ends by a spring, and fitting it around the staff which has a groove formed in it for the reception of the short arm.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 2.—N° 1809.

NEWTON, William Edward.—(*A communication from Frederick William Devoe.*)—"Improvements in cans and other vessels for containing liquid and other substances."

The joint, seam, or corners of the can or vessel are formed by the union of corrugated marginal portions of he plates forming the sides of the can. The nozzle is provided with a closed bottom so as to form an airtight oint.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 2.—N° 1810.

LAW, James.—(*Provisional protection only.*)—"A new or improved instrument for drawing corks from bottles."

This invention consists of an instrument for drawing corks consisting of a taper stem provided at top with handle, and at bottom with a curved blade or lifting piece, the top of the blade or lifting piece being either lain or provided with points or teeth.

The blade or lifting piece is inserted between the cork and neck of the bottle until the top edge of the lade is situated below the bottom of the cork. By then turning the handle at right angles the blade or fting piece is engaged under the cork, which may be lifted or withdrawn from the bottle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 2.—N° 1811.

STERNE, Louis.—" Improvements in the manufacture of driving belts, bands, or straps."

The belts, bands, or straps are made of india rubber and metal united in strips during the process of vulcanization or curing.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 2.—N° 1812.

SCHÄFER, Frederick. — " A new or improved apparatus for removing wax and dirt from the tops " of corks in bottles, and the combination of such apparatus with an appliance for drawing the corks."

The cover of a box which is placed over the bottle neck is caused to rotate, and cutters and brushes on its under side remove the wax and dirt from the cork; the wax and dirt fall between the box and an inner hollow cone; this cone is composed of spring plates, which accommodate themselves to the size of the bottle neck. The wax can be removed from the apparatus by taking out the cone. To combine a corkscrew with the apparatus the corkscrew is made the appliance for rotating the cover; thus while the wax is being removed the screw is entering the cork.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 2.—N° 1813.

ROE, Freeman.—(*Provisional protection only.*)—" An improvement in smoking pipes, which invention [illegible] " also applicable to cigar holders."

I form my pipe of any material and of any shape, with the usual bowl and stem; just under the [illegible] the stem, were the stem connects with bowl, I form a passage for the saliva to run down into a recess, a [illegible] or chamber, which recess, tube, or chamber may be formed of the substance of the pipe itself, or [illegible] external addition thereto; from the bottom of the bowl of the pipe I make one or more orrifices to [illegible] the nickatine oil to pass into the recess, tube, &c.; into this recess I place a plug of wood, ivory, or [illegible] other material covered over with an absorbent of cotton wool, sponge, or some other material which [illegible] absorb the oil and saliva.

The claim I make is not the shape of the pipe, nor the recess under the pipe, nor the drain from the [illegible] of stem to the recess for the saliva, nor yet for the orrifices to allow the nickatine oil to pass, nor for [illegible] plug and absorbent, but for the whole combined, or any portion of them combined as they are requisite [illegible] make a pipe or cigar holder that can be easily cleaned, and that will keep sweet and cool.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 3.—N° 1814.

SOANS, Richard.—" Improvements in machines for removing dirt and foreign matters from currants [illegible] " other fruit, and for afterwards drying the fruit."

The novelty consists in the combination of appliances for washing & drying the fruit in one machine including an outer pail for holding water & an inner one for the fruit, acting vertically, & the machinery for giving the necessary motion.

By placing the fruit in the inner pail & covering it with water, & putting the machinery in motion, it is washed, & by simply letting off the water & again putting the machinery in motion it is dried.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 3.—N° 1815.

CRESTADORO, Andrea.—(*Provisional protection only.*)—" Improvements in the means and apparatus " for navigating the air."

These improvements consist of a balloon made of metallic sheet, with a furnace attached at the bottom and two taps placed on a different level, as means of communication between the internal and external air. The operation is this :—The balloon being filled with common air, the lower tap closed and the upper one open, the internal air is rarefied by heat escaping in proportion through the open tap, thereby the balloon acquiring buoyancy, wnich is regulated by the rate of temperature. The lower tap is used for the purpose of letting in, when required, common air while the heated air escapes through the upper tap.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 3.—N° 1816.

JOHNSON, John Henry.—(*A communication from John Frothingham Ward and Alfred Wingate Craven.*) —" Improvements in pipe joints."

invention relates more particularly to gas & water pipes, and has for its object the facilitating the
f such pipes across rivers and creeks, and other places difficult of access, and allowing them to adjust
es to the uneven beds of the same without imparing the said joints. According to this invention
of one pipe, which serves as the spigot, is cast with bands or projections thereon for the purpose of
more securely the lead packing which is poured in after the end of the pipe has been inserted into
et of the next pipe; this socket in place of being cylindrical as heretofore forms a portion of a hollow
o that the packing on the end of one pipe is free to turn in any direction in the socket of the other
r the manner of a ball & socket joint.

ed, 8*d*. Drawing.]

A.D. 1868, June 3.—Nº 1817.

ON, John Henry. — (*A communication from David McFarland.*)—(*Provisional protection only.*)—
vements in railway trucks or vehicles."

invention consists in applying to the axle or journal of a railway vehicle, of a guard or protector,
ng either of a pair of clamping pieces of wood or other suitable material made to bear on each side of
between the wheels. These clamping pieces are firmly secured to cross supports, which are in turn
to the main side pieces of the framing. By the use of these clamping pieces the axle cannot
immediately displaced in case of breakage, but will be for a time maintained in position. It is also
to use in combination with these clamping pieces a tubular metal guard or protector, which
encloses the axle, leaving sufficient clearance all round to permit of the axle rotating freely therein.
ular guard fits at each end into recesses made in the hubs of the wheel, and the clamping pieces
entioned bear against opposite sides of the tubular guard in line of against the axle itself. A slight
above each wheel of the truck or vehicle there is fitted a wheel shield or cover, which is firmly
the main framing, so that should an axle break the body of the carriage will only descend or
o the top of the wheels, and will be supported thereby. The wheels are maintained in an upright
after a breakage of an axle by supporting pieces forming part of the main framing, such supporting
tending across the outside and inside faces of the wheels, so as to support them in case of accident.
eme outer ends of the axles are provided with journals which work in boxes or bearings in the
supporting pieces above referred to.

ed, 4*d*. No Drawings.]

A.D. 1868, June 3.—Nº 1818.

IT, Lemuel Wellman.—(*Provisional protection only.*)—"Improvements in meters for water and
liquids."

nvention consists of a screw-formed blade upon a shaft revolved within a cylindrical case by the
ssing in at one end of the case and out at the other end, the measure of the water being determined
number of revolutions of the screw. The record is kept by wheels or dials, a tooth on the shaft
one tooth on the first wheel every revolution of the screw, and so on.

ted, 4*d*. No Drawings.]

A.D. 1868, June 3.—Nº 1819.

Charles Denton. — (*A communication from Jules Soché.*) — (*Provisional protection only.*)—
vements in the production of iodine."

nvention consists in the substitution of bromine for chlorine in the separation of iodine from mother
f kelp or solutions containing the same.

other liquors, after precipitation of the salts of potash, &c., are concentrated and desulphurized, after
omine is added in sufficient quantity to precipitate the iodine, which is then removed by filtration
tation. The bromine remaining in the mother liquors is separated therefrom, and is used over again
ate fresh quantities of iodine.

ed, 4*d*. No Drawings.]

A.D. 1868, June 3.—Nº 1820.

ETT, Henry James.—(*Provisional protection only.*)—"Improvements in Venetian blinds, part
ch improvements is also applicable to roller blinds."

case of Venetian blinds the laths are raised by cords or bands attached to the lower lath and passing
ugh holes in the intermediate ones to a roller, above which is turned for winding up by a cord
ly wound thereon by the descent of the laths. This roller is retained in any position from rotation

under the weight of the laths by a ratchet wheel thereon, the teeth of which are taken into by the tooth of a lever acting over or nearly over the axis of the roller, and whose fulcrum is at a distance behind, whilst its outer end is carried down towards the under side of the roller, and is slotted for the passage of the winding cord, so that in moving that cord inwards this lever may be raised from the teeth of its ratchet wheel to admit of the descent of the blind.

The top lath is supported by pins in brackets at each end, passing into segmental openings in plates which have studs to pass into notches in the brackets corresponding with the centre of motion of this lath, and for the desired inclination of it, and such inclination is given by a cord or cords attached to eyes at opposite sides of this lath. The motion to the roller is applicable to roller blinds.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 3.—N° 1821.

JOHNSON, JOHN HENRY.—(*A communication from William Howell.*)—" Improvements in decorating " walls and other surfaces."

Decorating walls with a material composed of veneers or ornamental papers mounted on muslin or [illegible] paper or other fabric, and cut into panels, strips, or other forms, such pieces being nailed or tacked [illegible] the edges only to the walls, and having the joints covered by mouldings or beadings forming part of [illegible] decoration.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 3.—N° 1822.

REYNOLDS, GEORGE WAIDE.—(*Provisional protection only.*)—" Improvements in bobbin holders to be " used with sewing machines."

The novelty consists in having a bobbin holder sufficiently large to take the largest sized bobbin [illegible] would be required without incurring the expense and waste of rewinding.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 3.—N° 1823.

FAIRBURN, EDWARD.—" Improvements in condensers for working wool or other fibrous substances."

The novelty consists,—

In the employment of an ordinary " dicky " or roller covered with card clothing having grooves formed around its circumference at distances apart corresponding with the distances apart of the rings or dividers [illegible] the doffer, so that in its application for cleaning or sharpening the teeth of the doffer the said grooves will span the rings or dividers and thereby not act upon them. Also for doffers having the rings or dividers formed or fixed in wavy or curvilinear lines around their circumference parallel with each other in having a flange formed or fixed on one end of the said roller to fit into an extra groove formed or fixed on the end of the doffer of the same wavy form as the dividers, so that as the doffer rotates it will produce a transverse or endwise motion of the roller and thereby maintain the grooves in the roller opposite the rings [illegible] dividers of the doffer, consequently avoiding the action on the rings or dividers of the doffer.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 3.—N° 1824.

EVERITT, WILLIAM EDWARD.—(*Provisional protection only.*)—" An improvement or improvements in " the manufacture of tubes for marine boilers, surface condensers, and other similar purposes."

This invention refers to the making of such tubes of brass or yellow metal coated outside or inside or both with copper, applied by preference by means of electro deposition, the tubes are afterwards drawn if necessary.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 3.—N° 1825.

PIDDING, WILLIAM.—(*Provisional protection refused.*)—" Improvements in reels or receivers, and in the " modes of placing thereon needles threaded with twisted strands and other fibrous materials, and in the " application of certain known machinery for winding the twisted strands or other fibrous materials on " such and ordinary (when the needles shall have been threaded) reels or receivers."

The features of novelty consists in casting reels or receivers for twisted fibres or other like material (with or without rims) of an angular form, and placing in their centres cushions for the reception of needles threaded with any length of twisted fibrous strands or other like material, and the application of machinery described in the accompanying Specification.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 4.—N° 1826.

LIAM.—" Improvements in apparatus for supplying fuel to steam boiler and other furnaces."
ation consists in driving the fan by which the fuel is distributed on the fire grate first in one and then in the other, thereby spreading it evenly; also in driving the crushing rollers by indearing, so as to be able to vary their speed; also in connecting the damper to the strap fork of for driving the fan so as to close or partly close the damper when the fan is stopped, and in the opening of the damper by the pressure or heat of the steam.
1*s*. 4*d*. Drawings.]

A.D. 1868, June 4.—N° 1827.

David.—" Improvements in combining and casting various qualities of metal in the manufacanvils, top and bottom faces for hammers for drawing-out purposes, projectiles, and other

ention consists in forming the steel surfaces of articles where steel and iron are used respectively rious parts of one casting of a combination or mixture of charcoal and "Bessemer steel scrap, bar iron or steel," and "spiegel eisen." The invention also consists in forming that part of the which the steel is run of the composition usually employed when making steel castings and art of ordinary moulding sand.
8*d*. Drawing.]

A.D. 1868, June 4.—N° 1828.

Y, **George**, and **ROBERTSHAW, Paul.** —" Improvements in the construction of steam nd generating apparatus in connection therewith."
ort of this invention is to generate steam in steam boilers more rapidly and more economically ordinary plan. For this purpose by preference a cylindrical boiler with flat ends, and underboiler (where the same is horizontal) a chamber is placed which may be of elliptical formation, clips or fits the sides of the boiler, say about the centre, and which is set along with the boiler rk in the ordinary way, the ends of the chamber being closed with the exception of small ports ission of the outer air. Within such chamber when ordinary coal gas, for instance, is used for the heating the water in the boiler are placed a series of perforated pipes.
he boiler itself are placed longitudinally a series of tapering tubes also perforated and connected ter supply externally, each tube being provided with an independent tap or cock and being placed ne over the other. Between such cocks or taps and the end of the boiler where the tubes enter haft actuated by suitable gearing is caused to pass through them, and is perforated, say, where are used at intervals of one third of a circle where it passes through each tube respectively, being that when the water supply is turned on, and the gas jets lit in the chamber, water is only the boiler by one tube at a time, and then in the form of spray through the perforations before . If desired, however, the vertical valve shaft referred to may be substituted by one which will water simultaneously to all the tubes. By this arrangement it will be seen that the water supply dily regulated and graduated. Where ordinary fuel is used in lieu of coal gas modifications of equisite.
8*d*. Drawing.]

A.D. 1868, June 4.—N° 1829.

William Edward.—(*A communication from Jean Pierre Lattes and Raymond François Fauré.*) *nal protection only.*)—" Improvements in the construction of ploughs."
ention consists of a novel and moveable share and mould-board, and in the application to the fixed supports or body of a socket piece, and of a share forming a Grecian plough, also in the n, at pleasure, of a small share serving as a grubber.
ld board turns on a pivot on the share, and is held in position by a rod and hook taking into ced in various positions.
sform the plough from a turn board plough into a Grecian one or a grubber, a rod is the mould board and share removed, and another share is then fastened into the socket piece by twin wings are fixed thereto by a ring or brace and bolt. For grubbing, this share and wings are d a grubbing share inserted in the socket piece.
6*d*. Drawing.]

A.D. 1868, June 4.—N° 1830.

RIVES, Mathurin.—(*Provisional protection only.*)—" An improved ship's block."

Each sheave of the block has two points of support, the supports consisting of arms forming the strapping of the block. The strapping is suspended from a hook, so that it is free to oscillate and adopts all desirab inclinations. The lower ring which receives the return end of the tackle is also movable.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 4.—N° 1831.

BROOMAN, Clinton Edgcumbe.—(*A communication from abroad by the Company or Society " Cypri " Tessié du Motay and Company."*)—" Improvements in apparatus for the manufacture or productio " carbonic oxide, hydrogen, and carbonated hydrogens."

Gasogeneous apparatus to transform coal or other fuel into carbonated hydrogens, pure hydrogen mi with carbonic oxide, and carbonic oxide mixed with azote, the production of these gases being simultan and alternate. The feature of the invention is a special arrangement and combination of a disti apparatus with retorts similar to gas retorts, and of two furnaces for transforming the coke produced in retorts into carbonic oxide and hydrogen.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 4.—N° 1832.

SCHÄFER, Frederick.—(*Provisional protection only.*)—" A new or improved appliance for holdi " stick of sealing wax."

This consists of a tube to hold the stick of wax; the tube has a foot on which it can be stood, the being formed with or carrying a seal; the upper end of the tube has an opening, but not of suffi diameter to allow the wax to fall out. The wax as it is used is pushed out by a spring or other sui means. Sometimes another tube is placed parallel with the first to serve as an ether lamp.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 4.—N° 1833.

BROOMAN, Clinton Edgcumbe.—(*A communication from the Company or Society " Cyprien Tessi " Motay and Company."*)—" Improvements in the manufacture or transformation of iron and steel, and " apparatus employed therein."

The important features of the invention are, first, apparatus for transforming, by the difference of de between the metallic oxides and the metals on the one hand and carburetting bodies and the meta the other hand, cast iron into iron or steel, and iron into steel or cast iron; and, secondly, the employ of gases capable of producing successively and as required temperatures varying between the fusion of cast iron and the fusion of platina, that is to say, within the limits of the highest known temperatures.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 4.—N° 1834.

WOINAR, Robert.—" Improvements in central-fire cartridges for breech-loading fire-arms."

According to this invention the cartridge case is formed of copper, brass, or other metal, the discha end having a cavity, the edges of which are bent downwards to form a receptacle for the detonator, w consists of two pieces of metal, constituting a cover and base, the latter being perforated to admi communication between the detonator and the charge to be exploded.

The detonator is filled with chlorate of potash and sulphur or other detonating powder, and is discha by central fire percussion.

[Printed, 6*d.* Drawing.]

A.D. 1868, June 4.—N° 1835.

ASHTON, Joseph.—" Improvements in horse-shoes."

This Provisional Specification describes various projections to be arranged upon the under side of h shoes.

[Printed, 10*d.* Drawings.]

A.D. 1868, June 4.—N° 1836.

WORTH, John, and BARKER, Abraham.—" Improvements in covering rollers and clearers use " machinery for preparing and spinning fibrous materials."

This invention consists in the use of woollen cloth felted or woven for a covering, upon which the lea is placed as usual. Or the felted cloth may be used alone.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 4.—Nº 1837.

ETRIE, John, junior, and FIELDEN, John.—(*Provisional protection only.*)—"Improvements in obtaining hydraulic motive power, which improvements are also applicable to the propulsion of vessels by jets or streams of water."

This invention consists in the use of jets or streams of water admitted through orifices which permit an ompanying stream of air.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 4.—Nº 1838.

LAMON, Nahum.—(*A communication from Frederick Moritz Beral Bertram.*)—"An improved mode of nounting photographic and other pictures, patterns, and advertisements."

box, say, of paper (or it may be of metal) is formed in imitation of a medallion with a device stamped n its outer face, and has for a cover a plate or disc which carries the obverse of the medallion stamped on it. Enclosed in this box are the patterns or pictures which are mounted upon a band or strip of per, paper cloth, or other suitable substance, which is folded forwards and backwards so as to produce a e that will admit of being enclosed in the box.

[Printed, 8*d*. Drawing.

A.D. 1868, June 4.—Nº 1839.

RTH, William.—(*Letters Patent void for want of Final Specification.*)—"Improvements in deodorising petroleum and other oils."

This Provisional Specification describes forcing air at a high pressure through petroleum and other oils in cold state in order to deodorize them. Chlorine gas or other purifying and bleaching substance may be xed with the air.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—Nº 1840.

HEILER, Meinrad.—(*Provisional protection only.*)—"New or improved machines or apparatus for punching or preparing strips of paper or other suitable material for the automatical transmission of telegraphic messages, and for other purposes; and improvements in apparatus for regulating the speed of telegraphic instruments, parts of which invention, as indicated above, are also applicable for other purposes."

This invention consists, firstly, of a punching instrument for cutting either similar or different shaped les into paper, cloth, or other material for the purpose of automatic transmission of electric messages. is instrument is worked by three keys, two of them on being depressed cut the marks, composing the ters of the alphabet, and on being released draw the paper forward more or less, according to the length the mark cut. The third key is to forward the paper only for producing the spaces between the letters d words.

Secondly, of a machine to facilitate the working of the above instrument. This machine is worked by a adle or other motive power, and the parts acting upon the keys of the punching instrument are so nnected with the motive power as to allow them to stop and start at will while the machine continues its tion.

Thirdly, of a mechanism for regulating the speed of transmitting and recording instruments, as well as at of any other other train. This regulator consists of a fly, fitted on to a pinion or endless screw of the in, the air-resisting surface of which can be reduced by partly immersing it into a fixed box, where the air ns round with fly without resistance.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—Nº 1841.

ENRY, Michael.—(*A communication from Ernest Deligny.*)—"Improvements in converting basic phosphates of lime into soluble acid phosphates of lime and in obtaining and utilizing sulphite of lime."

Sulphurous acid is caused to act on the basic phosphates of lime, thereby converting them into soluble id phosphates and leaving a residium of sulphite of lime. The phosphate is treated with water saturated th suphurous acid, the saturations with sulphurous acid gas are repeated again and again, and the urated liquid is passed over or through the basic phosphate—or the basic phosphate is treated therewith—til a sufficiently concentrated solution is obtained. Soluble bi-sulphite of lime is thus produced which is composed by heat, whereby one equivalent of sulphurous acid is volatalized and sulphite of lime precipied. The solution is then evaporated to obtain the acid phosphates, leaving the sulphite as a residuum which can be converted into sulphate of lime or used for bleaching and fumigating; and for producing sulphurous acid especially by utilizing the residue of hydrochloric acid left in the manufacture of sulphate of soda from sea salt. Also it may be utilized for producing sulphite of soda and sulphate of lime by causing it to re-act on sulphate of soda. The apparatus used for converting the phosphates may consist of ovens for burning the sulphur or pyrites, chambers for refrigerating the sulphurous acid gas, the heat given off being utilized for heating the saturated solutions and precipitating the sulphite. Towers may be used for condensing the sulphurous acid gas by water or solutions below point of saturation. These are filled with lumps of basic phosphate or inert resisting material, the liquid being showered in at top and falling into vats. Dissolving and filtering vats may be used for pulverulent phosphates. The draft required may be produced by an exhauster such as is used in gas works. The nodules need not be crushed, as they dissolve when sprinkled. Sulphite of lime may be prepared by using sulphurous acid with carbonate instead of phosphate of lime, such sulphite being caused to re-act on sulphate of soda to obtain sulphite of soda and sulphate of lime.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—N° 1842.

CLARK, Alexander Melville.—(*A communication from Isaac Wixom Lamb.*)—"Improvements in "combination locks."

These improved locks are provided with a series of number wheels each having a notch in its outer edge, a key slot and ten small holes through its face. The relative position of the notch and key slot is different in every wheel, so that when the notches are together the key slots are not, and vice versa.

A spindle provided with a knob passes through the wheels, which spindle also carries a wheel having two pins fitted to pass easily through the holes in the number wheels.

Each of the wheels is numbered according to the relative positions of the key slot for receiving the bolt appendage, the different change in the combination being made by placing the wheels in different order in as many ways as there can be permutations in six figures (if six wheels be employed), each wheel can be placed either side out that number of permutations must be multiplied by the sixth power of two to indicate all the possible ways in which the wheels may be arranged. A slot is made in the back of the lock in which a key fits serving to prevent the key ring attached to the end of the spindle from turning until the latter is pushed back so as to free the key ring from the slots in the discs. A dial is also provided on the outside of the lock concentric with the spindle divided into numbered spaces; and in order to unlock an index on the knob is brought successively under the numbers on said dial and pressed in each time until all the notches in the number wheels are opposite and the pins entered in the same, after which the bolt is free to be thrown back. In locking the bolt is thrown forward and the catch of same raised, after which the knob is drawn out so as to cause the key ring to enter the wheels one by one.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, June 5.—N° 1843.

PAGE, Joseph.—(*Provisional protection only.*)—"Improvements in corkscrews."

The improvements consist of a metal collar being placed upon the shaft of a corkscrew, between the handle and the bell shaped frame, which by means of a reverse screw, ratchet teeth or rack and pinion, is made to act upon the neck of the frame in such a manner as to lift the corks from bottles of the ordinary construction.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—N° 1844.

ABEL, Charles Denton.—(*A communication from Amand Boutemy.*)—"A new or improved stopping "motion for spinning machinery."

This invention consists in an arrangement for stopping the first drawing rollers in spinning machinery when a thread breaks.

For this purpose the first drawing rollers are made to turn loose upon the spindle, and are caused to revolve therewith by means of sliding clutches with shallow teeth, which are kept in gear with a fixed clutch on the rollers by means of springs, and are pushed out of gear by the stoppage of the rollers, which is caused by a pawl catching into a ratchet wheel fixed on the ends of the drawing rollers. The pawl is actuated by means of a lever, the end of which rests against the thread, which, while the latter is entire, keeps the pawl out of gear, but when it breaks allows the pawl to drop into the ratchet wheel and thus stops the roller.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 5.—N° 1845.

BONNEVILLE, Henri Adrien.—(*A communication from Joseph Linard.*)—" A new and improved process " for feeding sugar factories or distilleries."

This invention relates to a novel manner of feeding factories wherein the juice of beetroot is worked into sugar or distilled, by means of which a great saving of expense is effected.

It consists in completely separating the places where the juice is extracted from the places where the processes of evaporation, of cooking, or of distillation are performed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—N° 1846.

SAWERS, Robert Brown. — (*Provisional protection only.*) — " Improvements in weaving ornamental " fabrics."

The improved fabric is woven by means of jacquard or equivalent pattern mechanism, and with what is known as "full" harness. Two warps are employed, a kind of double cloth being produced; and whilst more than two shuttles may be used it is a special feature of the invention that a very rich or elaborate effect can be obtained with only two shuttles, namely, by causing the warps, which are of two or more colors, to form figure in combination with the figuring formed by the weft. The warps of the under side, that is, those warps which appear principally on the under side and compose the ground of the pattern on the under side, are made to form figure on the upper side; and in like manner the upper warps are made to form figure on the under side.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—N° 1847.

GREGORY, Thomas Currie.—(*A communication from Elias Uriah Benedict.*)—(*Provisional protection only.*) — " Improvements in and connected with springs to be applied to railway rolling stock and " otherwise."

This invention relates to an improved mode of applying steel blades to form springs.

A spring may be composed of one or more steel blades, but in one modification of bearing spring for a railway carriage or wagon four steel blades are taken, being cut to a uniform length and bent to the same elliptic or circular arc, and these are placed in two pairs between a middle block which may be upon the top of the axle box and two end blocks or shoes which may be fixed to the framing of the carriage. The three blocks are made with side flanges or studs, which prevent the lateral displacement of the steel blades, and the end blocks are made with stops to limit the spreading action. The middle block has its bearing surface shaped concavely to a somewhat larger radius than that of the steel blade, so that when the spring is compressed its bearing contact is gradually increased. The end blocks have convexities formed on them at their inner ends, and the steel blades come in contact with and bear on these convexities at points somewhat short of the ends of the blades when the spring is much compressed, and this arrangement enables the spring the better to resist considerable compression.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—N° 1848.

REDDICLIFFE, Francis. — " Improved mechanical arrangements applicable to pump buckets and " partially applicable to pistons."

These are improvements upon an invention patented by the same party, 21st June 1867, No. 1821. Buckets and pistons are made in divisions fitting together, recesses being provided for the packing or gearing. A bar across the bucket has a screw or adjuster working through it, by operating on which by similar means to that formerly patented as above, the divisions are pressed together or within each other and the packing or gearing is pressed out or adjusted. Sometimes the fork described in the former Specification and the screw may be dispensed with, and the outer ring be made to screw on the inner. The valves of buckets may be made double, that is, the valve may have another valve in it, a greater opening for exit of fluid being thus provided.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 5.—N° 1849.

PRINCE, Alexander.—(*A communication from Edward L. Brown.*)—" Improvements in the manufacture " of metal castings."

According to this invention wrought metal is coated or covered with cast metal, in order to produce a casting capable of enduring powerful strains or concussions, by first thorough'y cleaning the wrought metal and coating it with a metal which it is difficult or impossible to melt at the degree of heat of the molten metal to be poured about it. Nickel may be used for this purpose, or plumbago, or platinum, or other such metals or materials. By these means the evolution of gases caused by the intervention between the wrought and cast metals of a fusible metal is prevented. The cast metal cannot melt the coating, and thus cannot impair the quality of the wrought metal, and the absence of gas prevents the formation of cells or of sponginess in the cast mstal.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—N° 1850.

ADDIS, WILLIAM JUDSON.—" Improvements in carts, parts of which improvements are applicable to " other vehicles."

For this purpose the bottom of the cart is formed of an open framework, below which is formed a box, as is usual in some descriptions of carts. This box is, as heretofore, formed of wood connected together by suitable angle irons. The sides of the cart are formed of an open framework, by pedestals of wood, dropped into suitable recesses in the platform or bottom of the cart, or connected thereto in any suitable manner. The cover or top of the box is formed by the platform or bottom of the cart into recesses, in which are fitted suitable panels or boards which are capable of easy insertion and removal therefrom. The wheels are formed of open segments of iron or steel, which when bolted together form a kind of skeleton wheel, to the periphery of which the wooden felloe and iron or steel tyre are bolted. The space into which the nave is fitted is hexagonal in form, and the nave is of wood, through the centre of which is passed a short axle which is square at the central portion and is turned at the parts projecting from the nave to fit into collars fixed to the bottom of the cart. The axle is fixed in the nave by means of a key passing through both nave and axle and secured in position by any suitable means. The spokes, felloe, and tyre of the wheels are flush with each other, and the open segments are by preference formed of ordinary tyre iron.

The wheels pass through parts of the bottom of the cart which project beyond the sides thereof.

The cart is provided with a suitable pole and yokes, or with shafts, and the pole or shafts are arranged to be received and fixed in sockets, and such sockets are applied at both ends of the cart, so that the pole or shafts may be fixed at either end.

Sockets are also formed in the centre of the cart, so that the pole may, when desired, be passed vertically through the centre of the cart and be used as a tent pole, at which time legs are let down from the cart to retain it in a vertical position.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 5.—N° 1851.

NEWTON, ORLANDO THOMAS, and NEWTON, GEORGE ALEXANDER.—" Improvements applicable to " steam boiler and other furnaces for the more perfect combustion and economisation of fuel."

The features of novelty in this invention consist in arrangements for admitting atmospheric air in a cool state through one or more orifices into the body of steam boiler and other furnaces as and for the purposes described.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 5.—N° 1852.

WADSWORTH, JAMES.—" A new fabric or composition suitable for soles and heels of boots and shoes " and for other purposes."

The features of novelty in this invention consist in pressing together layers of fibre saturated with gutta-percha, by which means a tough fabric is produced suitable for various purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 5.—N° 1853.

DANA, EDWARD AUGUSTUS.—(*Complete Specification but no Letters Patent.*) — " Improvements in the " construction of projectiles for rifled cannon or ordnance."

This invention consists in providing the conical sabot expander, described in the Specification of an invention for which Letters Patent were granted to me, bearing date the Nineteenth day of December, A.D. 1865, and numbered 3278, with a number of channels or serrations made into its outer surface for the purpose of allowing the surplus metal of the sabot to be driven inward by the force caused by the reaction of the walls of the gun against the band of the sabot, the object being to relieve the pressure that would otherwise be exerted against the walls of the gun.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 5.—N° 1854.

ROBERT, and STEIN, ANDREW.—(*Provisional protection only.*)—" Improvements in the manu-
f glass or similar vitreous substances, and in the application of such substances in the construc-
uildings."
visional Specification describes forming a vitreous substance by melting sand and flux together
them together with fuel into a blast or similar furnace. The material may be run into moulds
duce blocks, paving slabs, and similar articles used in building; or the vitreous substance may
t from the furnace into a foundation trench, or between plates to form the upper part of a

4d. No Drawings.]

A.D. 1868, June 5.—N° 1855.

, ANDREW.—(*Provisional protection only.*)—" Improvements in apparatus for ventilating
and other structures."
ntion relates to a peculiar construction of apparatus for ventilating buildings and other structures
example, ships and railway carriages; and consists essentially in the use for that purpose of a
hat similar to a drawer, but surrounded on all sides with perforated metal, wire gauze, or other
terial, whilst the front of the said slide is solid or non-perforated. This slide, which may be of
is made to fit easily into a corresponding opening or frame made or fitted in the wall of the
to be ventilated, and the slide is drawn out more or less so as to expose more or less of the
urface according to the degree of ventilation required. These slides, which when closed are
rly so with the face of the wall, are intended to be situate at convenient or suitable intervals
or of the appartment for the admission of air, which is dispersed upwards and laterally, but
directly forward into the interior of the apartment by reason of the obstruction presented by
d of the slide. The foul air is allowed to pass off through any convenient outlet provided with
alves or dampers and situate near the ceiling.

4d. No Drawings.]

A.D. 1868, June 6.—N° 1856.

JOHN.—" Improved mechanical arrangements for facilitating escape from fire, for lifting and
weights, and for other similar purposes."
aptation of the well known system of lazy-tongs with other mechanical arrangements. In case
use such system to raise a double carriage to the height required, which is done by securing the
of the levers on the axles of two pair of wheels, which serve as fulcrum; placing under the first
ttached to the fore axle pullies and on the hind axle a species of windlass, the action of which
rds or chains causes the levers to rise so that the inner portion of the double carriage may be
l its end lodged on the window sill or other projection of the burning building forming a bridge
or fixed carriage.
g a similar system of levers is used resting on a framing, on the top edge of which the ends of
wer levers are secured, while the fore ends rest upon the axle of small wheels running on planes.
(with handle) is fitted to one side at back of frame, also further forward a larger wheel of the
iption, but with its outer periphery notched to receive a paul. An axle passes from centre of
through the centre of a [*pinion wheel in the interior, and on the opposite side of the**] framing.
carrying a toothed wheel is placed about the centre inside the framing. A cord is secured to a
l piece under the windlass, and doubling over the windlass passes over a pulley attached to the
wheels. On turning the handle of the small V wheel which winds up the cord, the other V
on, cog wheel, and windlass rotate, and forcing the wheels to rotate backwards on their planes,
evers to raise a horizontal platform on their top to the level required. On raising the paul the
s by its own weight.

1s. 4d. Drawings.]

A.D. 1868, June 6.—N° 1857.

ABRAHAM.—(*Provisional protection only.*)—" Improved machinery or apparatus for treating or
spun or twisted silk waste for dressing or combing."
ntion consists in the employment of a pair of feed rollers with or without an endless apron to
lly spun or twisted silk waste yarns to a revolving card clothed cylinder, which partially takes out

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s "pinion wheel in the interior and on the opposite side of the" are found in the copy of the Abridgment delivered
nt, but do not appear in the original Abridgment.

the twist and receives the said waste upon its surface, from which it is taken by a series of revolving combs working in contact therewith at a quicker surface speed, and thence travelling in contact with another card surface running in contact with the cylinder, but at a slower surface speed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—N° 1858.

RAE, Martin.—(*Provisional protection only.*)—" Improvements in lamps."

The wick tube is composed of two parts connected together, in the lower part is placed an ordinary wick, and in the upper part a thin cotton braiding. When light hydrocarbon oils are used a plate is placed at each side of the top part to deflect the air against the lower part of the flame. The thin braiding is soaked in alum and dried to prevent it from carbonizing too rapidly.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—N° 1859.

BONNEVILLE, Henri Adrien.—(*A communication from Charles Auguste Constantin Eckhold.*)—(*Pro- visional protection only.*)—" A new and improved apparatus for levelling and measuring distances, altitudes, " and angles."

This invention relates to an apparatus by means of which the level or perpendicular difference between two objects, the vertical line between the centre of the sight or the spot where the apparatus is placed any object, the horizontal distance between the apparatus and any object, the height of any object, and angles of any object, may each and all be obtained.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 6.—N° 1860.

DEWAR, James.—" Improvements in preserving and arresting decay in certain vegetable substances " the purposes of food and manure."

Preserving for the purposes of food and manure, grain and marine vegetable substances, arresting furth decay therein when it has already commenced, and thereafter preserving them, by subjecting them to action of sulphurous acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—N° 1861.

MAW, George.—" Improvements in the manufacture of garden tallies or plant labels or markers."

This invention refers to the manufacture of the articles specified of burnt earthenware, either compos of pulverized or plastic clay, the blank forms are subsequently glazed or left plain as desired, and are inscrib or printed upon by the ordinary methods of earthenware printing or painting. The unglazed blanks be written upon with any suitable material, and they may be oiled, painted, or varnished or coated composition either before or after such writing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—N° 1862.

NEWTON, Alfred Vincent.—(*A communication from Frederick Moritz Beral Bertram.*)—" Improve " apparatus for storing and measuring petroleum and other liquids."

Airtight measures connected with a reservoir by pipes fitted with two-way cocks for admitting discharging the liquid. The measures may be fitted with adjustable retaining troughs for keeping regulated quantities when the liquid is measured by weight.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, June 6.—N° 1863.

WILKERSON, Samuel.—(*Provisional protection only.*)—" Improvements in machinery or apparat " for scattering or spreading manure."

According to this invention a receptacle for the manure is constructed of an oblong square form set on axle and wheels for conveyance.

The manure should be in a partially liquid state to facilitate its discharge, which is effected by means rotating cylinder provided with a series of blades which throw out the manure; a bevil wheel is keyed the axle and communicates with a shaft extending to the cylinder and gearing with it by toothed wheels; curved rack in connection with the shafts serves to elevate or tilt the receptacle as required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—N° 1864.

NNEGAN, George.—“ Improvements in band saw machines.”

The invention consists in mounting a band saw upon two rollers revolving on horizontal axes, the pullies rollers being placed on opposite sides of the machine and at the same level or elevation, one pulley being each side of the travelling table which carries the log. By this arrangement the endless saw as it passes n one pulley to the other will not only travel horizontally but will also cut the timber in a lateral or izontal direction.

he rollers are mounted in suitable bearings capable of sliding vertically upon the framing of the machine, of being fixed at any desired height therein, so as to render them capable of adjustment to the timber e cut, which may be supported in any suitable manner, but it is preferred to fix it by “ dogs ” to a table vided with rollers capable of running upon suitable rails, the centre of the table being supported by ers mounted upon fixed axes of motion ; and it is preferred to give motion to such table or bench by ans of a screw driven by a cone pulley fixed thereon ; and motion is given to the band saw as heretofore, e slack of the driving strap being taken up by means of a weighted roller or other compensating motion.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, June 6.—N° 1865.

VIERE, Henry, and BAKER, Frederic Thomas.—“ Improvements in machines and hand tools used for closing the ends of central-fire and pin cartridges when loaded.”

These improvements consist of a tube (which may be slightly oval inside) in which the cartridge is held the short end of the lever attached to the tube, “ and used for moving it forward,” pressing laterally on e base of the cartridge, which with the tube is propelled forward in the barrel of the machine by a lump fixed to it, sliding in an oblique slott in the barrel, the cartridge being prevented from slipping out by an n or lip affixed to the lever and laying over the end when the machine is worked. The lever here entioned moves vertically, but it may be arranged to have a lever working horizontally connected with the rmer one. A link, short leg-rack, wedge, cam, or similar contrivance may likewise be used. When plied to hand closing tools it will be simply necessary to have the lever which secures the cartridge ld down by means of a curved steel bar attached to it and made to clutch the outside of the barrel, hich may be made slightly oval inside. The above improvements apply to central fire cartridges more pecially; the following referring equally both to central fire and pin cartridge closers, consists in using nall wheels or rollers instead of pins in the cup for turning over the edge of the cartridge to produce more smooth edge and lessen labor by reducing friction.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 6.—N° 1866.

ETCALF, Thomas, and LONGFELLOW, Thomas.—(*Provisional protection only.*)—“ Improvements in looms for weaving.”

The object of this invention is to prevent the breakage of warp threads (when the shuttle fails to reach its x and remains in the “ shed ”). To obviate this the “ swells ” in the back of the shuttle boxes are nnected together, and under the “ going part ” a catch lever is attached to the outer end of the slay lath d, and so arranged that when the shuttle passes upon the slay it (the catch) acts upon a vertical fork ving its fulcrum upon a stud connected to the side frame of the loom. This action causes the slay lath d to open backwards and the slay itself and yield to the shuttle.

At this point a trap door fitted in the back and at the inner end of each shuttle box is caused to open by ason of the pressure of the shuttle and allowed to fall down so that the shuttle may get out of the way, ach trap door when the shuttle works right being kept in position by a foot lever secured to the slay lath d and operated upon by means of another lever on such slay lath rod acted upon by a spring affixed to e back of the going part.

Another lever, also secured near to the end of the slay lath rod, as the going part approaches the front of e loom now presses upon a vertical lever (having its fulcrum near the bottom of the loom), which passes rough the front of the shuttle box plate and throws it out of a notch, when it is pulled by a spring in a rection at right angles to its previous motion, and by means of a wedge formed piece of metal secured to under the shuttle box causes it to press upon one arm of a bell cranked lever, the other arm of which cts upon the break lever of the loom and thus causes it to stop.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 6.—Nº 1867.

WESTON, Thomas Aldridge.—"Improvements in machinery or apparatus for raising and lowering, "moving or transporting heavy bodies."

This invention consists in the application of circular or semi-circular inclines, and of a frictional surface of larger diameter that such incline to the barrels, gearing and sustaining ratchet wheels of hoisting apparatus of all kinds, the action of the barrel and gearing being to produce sustaining friction between the face of the ratchet wheel and the frictional surface on the side of the gearing, such parts being forcibly pressed together by the inclines both in hoisting and lowering, whilst the pressure and friction serve also to sustain the load.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, June 6.—Nº 1868.

YOUNG, James.—(*Provisional protection only.*)—"Improvements in treating hydrocarbons."

The feature which constitutes this invention is heating and distilling hydrocarbons such as paraffin, paraffin oil, and petroleum, in contact with or from alkalies or alkaline earths.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—Nº 1869.

BROUGHTON, William.—(*Provisional protection only.*)—"Improvements in kitchen ranges."

This Provisional Specification describes modes of connecting together the several parts of a kitchen range, also a mode of fixing the tap into the boiler, also an arrangement for ventilating the oven, and also for adapting a false bottom to the grate of what are known as self acting kitchen ranges, also forming the shelf of an oven into a hanging plate to hang in front of the fire, also a mode of fixing the front fire bars.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—Nº 1870.

WAENZEL, Franz.—(*Provisional protection only.*)—"Improvements in central-fire cartridges."

I provide the rear end of the cartridge case with a central inner cavity for containing the fulminate. The fulminate is placed in a perforated dish shaped metal disc, which disc is placed in the rear end of the cartridge and there secured, the fulminate being contained between the disc and the cartridge case, which is afterwards filled in the usual manner. The fulminate when exploded communicates with and ignites the charge by means of the perforations in the disc.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 6.—Nº 1871.

CLARK, Alexander Melville. — (*A communication from Julien Laurent.*) — "Improvements in "machinery for forging or shaping metals."

The machinery consists of vertical standards in which is fitted a hammer rising and falling in guides of said standards. The position of the hammer with regard to the metal is regulated by means of hand wheels and gearing connected with screws mounted vertically on either side. Motion is imparted to the hammer by means of two fly wheels mounted on a shaft turning in bearings in the standards, and connected together by a spindle mounted somewhat eccentrically on the fly wheels so as to form a crank pin for producing the up and down motion of the hammer which is connected to said spindle by a connecting rod. The bearings of the spindle also carry screw rods connected below to the hammer bar, serving to raise the hammer and balance the same. The weight of the whole sliding arrangement is counterbalanced by the aid of weights, the chains from which pass round pullies fixed above and attached to the frames carrying the bearings of the fly wheels. Motion is further imparted to said fly wheels by means of band pullies driven from any suitable source of power.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, June 8.—Nº 1872.

WATSON, George, BAKER, Walter Joseph, and BAKER, Samuel Thomas.—"An improved "artesian tube well and lifting force pump."

This improved tube well consists of a series of tubes joined together, a straight-fluted or rifle-grooved penetrator revolving easily in the bottom length, which has orifices for admission of water, and a valve to prevent its returning. Another foot valve is placed at any suitable height, and above this works the bucket valve or plunger, the pump rod working through the head and delivery valves, and being by preference hollow to serve for priming the pump.

liver water to a great height pumps with the necessary valves between are placed at intervals, all
p buckets being attached to one and the same rod or pipe, so that one stroke lifts the water in
ght or division and delivers it at the top.
natic, hydraulic, steam, or any available power is used for forcing the penetrator into the ground.
king large wells the penetrator may be constructed to serve as excavator, by having apertures
from the grooves to the inside of the tube; or the penetrator may be connected with a smaller tube
and worked inside a larger tube by worm wheel or otherwise. The penetrator may also carry any
of drills for piercing rock or hard substances, and the debris may be lifted within the outer tube by
d bucket or otherwise.
ed, 10*d*. Drawing.]

A.D. 1868, June 8.—N° 1873.

TTS, Samuel.—(*Provisional protection only.*) — " Improvements in double-barrel breech-loading
ms."
nvention consists in discharging double barrel drop-down guns by means of pins or strikers jointed
ammers immediately below the head or comb. The front ends of the pins or strikers work in holes
break off of the gun. On the descent of either of the hammers its pin or striker is driven forcibly
the break off and made to strike upon and discharge the cartridge.
ted, 4*d*. No Drawings.]

A.D. 1868, June 8.—N° 1874.

Y, Dominic.—" Improvements in locks."
vention relates to locks in which tumblers are used.
first place I give such a shape to the faces of the tumblers against which the stump works that
ressure be applied against the bolt so as to force it back, the stump will hold the tumblers down
en them, so that as long as the pressure is on the bolt they cannot be moved.
second place I use a loose socket which turns with the key; this socket is provided with a cam or
which prevents it being turned beyond a certain position when the bolt is being pressed back and
p consequenly locking the tumblers. A spring may be used in connection with the loose socket so
ain it in position or lock it in a certain place.
third place I use a series of springs, one acting on each of the tumblers in such a way that should
bler be raised too high while tampering with the lock it is caught by the spring and prevented
turning to its place, thereby preventing the bolt from being pushed back. These springs may be
by the stump when the proper key is used, but should the bolt be moved by any other means a
lls and prevents the stump from acting on the springs.
ed, 8*d*. Drawing.]

A.D. 1868, June 9.—N° 1875.

N, William. — (*Provisional protection only.*) — " Improvements in or appertaining to steam
s."
invention has reference to the construction of hollow bridges for steam boilers provided with a
of longitudinal open fire tubes through the depth or thickness of the bridge, the bridge fitting in
box and being provided with inlet pipes to the boiler for supplying water to the bridge, and also an
pe to convey away the steam.
ed, 4*d*. No Drawings.]

A.D. 1868, June 9.—N° 1876.

ND, Richard.—" Certain improvements in the method of ventilating hats or other coverings for
ad."
f the forepart of the head leather or pad (so arranged that air enters behind it into the hat) I cut
arge segment so that the air can get sooner and better to the head than is possible whan impeded by
ary depth of the leather.
ed, 4*d*. No Drawings.]

A.D. 1868, June 9.—N° 1877.

NUTI, Fortuné François.—(*Provisional protection only.*)—" An improved inkstand."
kstand consists of a holder with a cylindrical internal cavity. The top of the holder is provided
p screwed or otherwise fixed thereto. A piston formed with a hollow perforated stem open at the
to act as a valve for the admission of air is placed in the interior of the holder, the upper end of the

A.D. 1868, June 6.—Nº 1867.

WESTON, Thomas Aldridge.—"Improvements in machinery or apparatus for raising and lowering, "moving or transporting heavy bodies."

This invention consists in the application of circular or semi-circular inclines, and of a frictional surface of larger diameter that such incline to the barrels, gearing and sustaining ratchet wheels of hoisting apparatus of all kinds, the action of the barrel and gearing being to produce sustaining friction between the face of the ratchet wheel and the frictional surface on the side of the gearing, such parts being forcibly pressed together by the inclines both in hoisting and lowering, whilst the pressure and friction serve also to sustain the load.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, June 6.—Nº 1868.

YOUNG, James.—(*Provisional protection only.*)—" Improvements in treating hydrocarbons."

The feature which constitutes this invention is heating and distilling hydrocarbons such as paraffin, paraffin oil, and petroleum, in contact with or from alkalies or alkaline earths.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 6.—Nº 1869.

BROUGHTON, William.—(*Provisional protection only.*)—" Improvements in kitchen ranges."

This Provisional Specification describes modes of connecting together the several parts of a kitchen range, also a mode of fixing the tap into the boiler, also an arrangement for ventilating the oven, and also for adapting a false bottom to the grate of what are known as self acting kitchen ranges, also forming the shelf of an oven into a hanging plate to hang in front of the fire, also a mode of fixing the front fire bars.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 6.—Nº 1870.

WAENZEL, Franz.—(*Provisional protection only.*)—" Improvements in central-fire cartridges."

I provide the rear end of the cartridge case with a central inner cavity for containing the fulminate. The fulminate is placed in a perforated dish shaped metal disc, which disc is placed in the rear end of the cartridge and there secured, the fulminate being contained between the disc and the cartridge case, which is afterwards filled in the usual manner. The fulminate when exploded communicates with and ignites the charge by means of the perforations in the disc.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 6.—Nº 1871.

CLARK, Alexander Melville. — (*A communication from Julien Laurent.*) — " Improvements in "machinery for forging or shaping metals."

The machinery consists of vertical standards in which is fitted a hammer rising and falling in guides of said standards. The position of the hammer with regard to the metal is regulated by means of hand wheels and gearing connected with screws mounted vertically on either side. Motion is imparted to the hammer by means of two fly wheels mounted on a shaft turning in bearings in the standards, and connected together by a spindle mounted somewhat eccentrically on the fly wheels so as to form a crank pin for producing the up and down motion of the hammer which is connected to said spindle by a connecting rod. The bearings of the spindle also carry screw rods connected below to the hammer bar, serving to raise the hammer and balance the same. The weight of the whole sliding arrangement is counterbalanced by the aid of weights, the chains from which pass round pullies fixed above and attached to the frames carrying the bearings of the fly wheels. Motion is further imparted to said fly wheels by means of band pullies driven from any suitable source of power.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, June 8.—Nº 1872.

WATSON, George, **BAKER**, Walter Joseph, and **BAKER**, Samuel Thomas.—" An improved "artesian tube well and lifting force pump."

This improved tube well consists of a series of tubes joined together, a straight-fluted or rifle-grooved penetrator revolving easily in the bottom length, which has orifices for ad
prevent its returning. Another foot valve is placed at any suitable height,
valve or plunger, the pump rod working through the head and deliv
hollow to serve for priming the pump.

To deliver water to a great height [illegible] the pump buckets being attached to one and [illegible] each height or division and delivers it at the top.

Pneumatic, hydraulic, steam, or any available [illegible]

In sinking large wells the [illegible] eading from the grooves to the inside of the [illegible] r rod and worked inside a larger tube by [illegible] umber of drills for piercing rock or [illegible] hain and bucket or otherwise.

[Printed, 10*d*. Drawing.]

A.D. [illegible]

WILLETTS, SAMUEL.—(*Provisional protection only.*)—"[illegible] fire-arms."

This invention consists in discharging [illegible] to the hammers immediately below the [illegible] in the break off of the gun. On the [illegible] through the break off and made to [illegible]

[*Printed, 4d.* No Drawings.]

A.D. [illegible]

COFFEY, DOMINIC.—"Improvements in [illegible]"

My invention relates to locks in which [illegible]

In the first place I give such a shape [illegible] hould pressure be applied against the bolt [illegible] nd fasten them, so that as long as the [illegible]

In the second place I use a loose [illegible] ccentric which prevents it being turned [illegible] he stump consequenly locking the tumblers. [illegible] to retain it in position or lock it in a [illegible]

In the third place I use a series of springs [illegible] e tumbler be raised too high while [illegible] rom returning to its place, thereby [illegible] leased by the stump when the proper [illegible] atch falls and prevents the stump from acting on the springs.

[Printed, 8*d*. Drawing.]

A.D. [illegible]

ANGAN, WILLIAM.—(*Provisional protection only.*)—"[illegible] boilers."

This invention has reference to the [illegible] umber of longitudinal open fire tubes [illegible] e fire box and being provided with inlet [illegible] utlet pipe to convey away the steam.

[Printed, 4*d*. No Drawings.]

A.D. [illegible]

USBAND, RICHARD.—"Certain improvements [illegible] the head."

Out of the forepart of the head leather or pad [illegible] way a large segment so that the air can get [illegible] he ordinary depth of the leather.

[Printed, 4*d*. No Drawings.]

A.D. [illegible]

ENVENUTI, FORTUNÉ FRANÇOIS.—[illegible]

kstand consists of a hol[illegible] [illegible] the holder is provided [illegible] open at the [illegible] holder, the upper end of the

therwis

e for

stem passing through the cap, and being provided with a top which is screwed on the upper end of the stem above the cap, the piston being thus enabled to follow the upward and downward motion of the cap as it is screwed or unscrewed. A dipping cup is formed or placed on the lower part of the exterior of the holder or reservoir and communicating with the interior thereof. The inkstand is filled by pouring the ink into the cup, the screw top of the piston stem having been previously removed. The ink is propelled into or withdrawn from the cup by screwing or unscrewing the cap, and the ink may be likewise withdrawn by removing the top of the piston stem.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 9.—N° 1878.

BOURNE, John.—(*Provisional protection only.*)—" Improvements in the production and application of " motive power, parts of which improvements are also applicable to other purposes."

Heat is produced or gas generated by projecting coal dust or liquid fuel into a furnace or hot chamber with suitable supplies of air and an admixture of steam in some cases. The products of combustion are sometimes employed to generate steam in the usual way in a boiler and sometimes driven into the water of the boiler through a suitable orifice, and sometimes have the heat abstracted by a shower of water, the resulting steam and gases being employed to work an engine in the manner of a common steam engine. The supply of air is sometimes so adjusted that carbonic oxide is generated which is exploded in a common gas engine, the piston and stuffing box of which are lubricated with water. In steam engines the educted steam is made to feed the boilers and also to expel the air and water from the condenser by being employed as a jet, and where the momentum is not sufficient it is increased to any desired extent by superheating the steam. A superheated steam jet mixed in some cases with the hot products of combustion is employed as a fire engine and for raising water for the supply of towns, lifting sewage and sandy water from foundations, and generally for propelling liquids, the density of such liquids being sometimes diminished by aerating them. Ships are propelled by jets of the hot products of combustion mixed with steam issuing beneath the water at the stern through orifices so contrived as gradually to load the jets and thus obviate wasteful slip; and rotatory motion is obtained by affixing such orifices to an axis revolving like a Barker's mill. The expedients used for cooling the cylinders of gas engines are also prescribed for cooling cannon.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 9.—N° 1879.

WILSON, Joseph Spoor.—(*Provisional protection only.*)—" A new mode of imparting rotatory motion to " mills employed for grinding grain, coffee, and other berries and vegetable substances of a similar character."

This invention consists in adapting a grinding mill or mills to a cart or truck, and connecting the running wheels thereof by means of toothed driving wheels and pinions to the grinding cylinder of the mill. By these means the cart or truck serves a double purpose, namely, carrying goods to be delivered to customers and at the same time grinding coffee or other substances as the cart or truck is being drawn along.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 9.—N° 1880.

CLARE, Thomas Deykin. — (*Provisional protection only.*) — " Improvements in moulds for casting " metallic articles, and in the treatment and means of finishing cast metallic articles."

One part of this invention consists in making moulds for casting metallic articles of thin metal or sheet metal. The said moulds are made in two or more parts by stamping or pressing in dies. The parts of the mould are put and fastened together, or the parts of the moulds are placed together in a casting box or receptacle, and sand or other material is rammed or pressed around the moulds and the melted metal cast therein.

Another part consists in treating and finishing cast articles made of cast iron, malleable cast iron, cast steel, and cast homogenous iron in the following manner :—The cast articles are first thoroughly annealed or decarbonized and the oxide removed; they are afterwards heated sufficiently to render them soft and compressible, and are then hammered, pressed, or stamped in steel or other hard dies or a series of dies, so as to finish the exterior of the article or give it the required shape and size.

The use of skilled labour in machining and filing is thereby in great part dispensed with.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 9.—N° 1881.

BOYMAN, Richard Boyman. — " Improvements in aerial navigation, and in the machinery for the " same."

This consists in the combination of new and old things for such purpose. The new thing is the use and application of the air we breathe at the ordinary temperature, or heated in a metallic envelope, and in cing the same to the required lightness for the elevating and sustaining power instead of gas. The hings intended to be combined therewith were also invented by me for aerial navigation, and are con- d in the Letters Patent referred to in my Provisional Specification, which also specifies the particular tion before patented which are combined with my present invention.

rinted, 3s. 6d. Drawings.]

A.D. 1868, June 9.—N° 1882.

ARD, George.—" An improved manufacture of parquet flooring."

pieces composing the pattern are cut out (in thin woods) in the usual manner, and when properly ged are backed with scrim canvas or paper, thus producing a thin floor covering that may take the of floor cloth or carpets.

inted, 4d. No Drawings.]

A.D. 1868, June 9.—N° 1883.

FORD, John, STAFFORD, John William, and STAFFORD, Daniel Stephen.—" Improve- nts in the construction of carriages used with apparatus or elevators for elevating straw and other uce."

invention consists in forming the carriage of two or more parts, and free to slide one within the or over and under each other, or in any other suitable form, so as to be capable of being extended. efer to impart motion to the frames by means of racks and pinions.

inted, 8d. Drawing.]

A.D. 1868, June 9.—N° 1884.

RO, Archibald, and ADAMSON, William Bennet. — (*Provisional protection only.*) — " An roved method of manufacturing tools for hewing or cutting stone, slate, marble, and other substances, improvements in the compounds or materials of which such tools are made."

feature of novelty which constitutes this invention is the use of certain metallic compounds from tools for cutting stone and other substances are cast in chills and are thus at once produced ready for ontradistinction to the ordinary method of producing such tools whereby they require both grinding lishing.

nted, 4d. No Drawings.]

A.D. 1868, June 9.—N° 1885.

SON, John Henry.—(*A communication from Ernest Deligny.*)—(*Provisional protection only.*)— ovements in the treatment of oxide of iron with a view to its use in blast furnaces."

invention consists in mixing the powdered oxide of iron obtained from the burning or calcination pyrites with bituminous coal and tar and compressing the whole into blocks to be thrown into the rnace. Or the coal and powdered oxide of iron may be mixed together dry and introduced into an y coke oven whereby a ferruginous coke is obtained suitable for use in the blast furnace. By mixing e oxide of iron, chloride of manganese and introducing the same into the furnace a cast iron well l for the manufacture of Bessemer steel will be obtained.

ted, 4d. No Drawings.]

A.D. 1868, June 10.—N° 1886.

S, George. — (*A communication from Auguste Emanuel Eliaers.*) — " Improvements in the con- tion of lounging chairs."

frame of the chair is composed of two side supports united by cross rails so as to be perfectly rigid and on these supports is pivoted the ironwork which carries the seat, the back, the side brackets, ow pieces. A cushion is mounted on a hinge to the front of the seat, and between the side brackets plank which serves as a support to the feet. In one of the elbow pieces is mounted a socket to s adapted the lever which carries the reading desk. A special mechanism herein-after described serves the movable parts in any convenient position. The ironwork is composed of two parts hinged r, a trunnion or gudgeon projecting therefrom outside is supported and turns in each of the side ts, and a lower trunnion projecting from the inside carries the seat, being fitted in a socket fixed to me of the said seat.

side brackets are screwed to the front part of the ironwork, and are connected by two cross rails being d on the inner side with two grooves in which slides a plank, to the lower edge of which a second or footboard is secured by hinges; this latter can either be opened out at right angles to the former, olded up against it under the cushion. The foot board is constantly drawn up by means of a spring, and may be elongated if desired by pressure of the feet thereon. The footboard also serves to raise and support the leg cushion when required.

To fix the movable parts in any desired position the seat has jointed to it a curved iron bar pierced with several holes, into one of which projects a pin or bolt attached to one of the cross rails of the frame.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 10.—N° 1887.

FRAYE, Peter.—(*A communication from Fenélon Flinois.*)—(*Provisional protection only.*)—" Improvements " in making and manufacturing the musical instrument known as the harmonium."

Obviotes all difficulties hitherto met with iu the construction of previous instruments, prevents numerous defects inherent thereto, and adds to the beauty and force of the tone, &c.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 10.—N° 1888.

FERRIE, William.—" Improvements in and connected with smelting or blast furnaces."

In carrying out the invention a series of retorts or long vertical chambers are constructed round the throat or top of the furnace, with their bottom ends opening into the furnace, and the raw coal is charged separately into these retorts whilst the ironstone ores and limestone or flux are charged into the centre in the ordinary way. At a point near the lower end of each retort air is introduced by a nozzle or tuyere from a blowing engine in sufficient quantity to support combustion and to carry on the coking process. The coke made in the retorts descends through the furnace uniformly with the ores and flux in the centre, and continues in contact with the sides of the furnace down to the tuyeres, by which the main blast is introduced and greatly facilitates the reduction of the ores. The gas produced in the process of coking the coal may be burnt for heating boilers or for other purposes, but it is preferred to utilise it by forcing it into the smelting furnace at a level or levels a little above the main tuyeres.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 10.—N° 1889.

LADYMAN, James Thomas.—"Improvements in machinery or apparatus for working wood."

This invention has reference to that description of machine known as the "general joiner;" and consists, first, in forming a screw thread upon the end of the saw shaft for receiving a face plate for turning various objects, and also for receiving tennoning, moulding, and other cutter blocks. The end of the shaft is also arranged for receiving a cylindrical mortice cutter with sloping cutting face, and having a helical groove formed in it for removing the "core" as it is cut.

Second, constructing the table which supports the wood so as to swing round, by which means the cramp for securing the objects to be cut can also be employed for holding an ordinary slide rest when required for turning purposes. This table has a reversible slide with a fence attached thereto for placing the wood against when cutting mortices and tennons, the fence being situated behind the cutting tool when mouldings, &c. have to be cut.

Third, a cross cutting table placed on the saw table with a rail on one side which slides in a V groove in the saw table parallel with the saw, and having a saddle upon the other side which slides along a bar supported at each end by the framing.

Fourth, forming the framing of a hollow or box casting having two pedastals for carrying the saw spindle and table, the mechanism for raising and lowering which is inside one of the pedestals, and having an arm for carrying the pivotting column of the mortising table.

Fifth, arranging a counter shaft with speed pulleys corresponding with those on the machine, and two or more different sizes of fast and loose pulleys to provide the different speeds required.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 10.—N° 1890.

HAMER, William, and DAVIES, Joseph.—" Improvements in the furnaces of salt pans."

Our invention consists in an improved mode of constructing the furnaces of salt pans by means of which a large portion of the heat is utilized and employed to heat water or generate steam, and the sides of the furnaces are rendered less liable to injury than heretifore. Instead of the brickwork sides used hitherto in these furnaces, and which are open to great objections, we use iron vessels which may be filled with water; this water after being heated or converted into steam may be used for various purposes.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 10.—N° 1891.

'ER, JOHN.—(*Provisional protection only.*)—" An improved portable closet or commode seat." ortable and folding appliance to be used as a seat to a pan, water closet, or privy.

inted, 4*d.* No Drawings.]

A.D. 1868, June 10.—N° 1892.

ENS, CHARLES WILLIAM.—" Improvements in the manufacture of cast steel, and in furnaces and ıratus employed for that purpose."

s invention has reference to the process of making cast steel, described in the Specification to the ant's former Patent, N° 2395 of 1867; and consists, firstly, in employing in place of the vertical rs for introducing the ore into the furnace, as there described, a revolving cylinder or drum inside a , which cylinder is arranged nearly horizontal, being slightly higher at the one end, at which the introduced into it together with the reducing gas or other reducing agents. The ore is made to pass along the cylinder by the rotation thereof, while this is heated externally by the combustion of the ing gases escaping through an aperture in the lower end of the cylinder into the surrounding casing, jets of heated air at a certain pressure are brought into contact therewith. The spongy iron thus ıced in the cylinder passes through the said aperture and through a hopper into the metal bath on the f the furnace.

des of manganese as also lime and other reducing agents may be charged with the ore into the ing cylinder. When the bath is complete, and is being tapped, the rotation of the cylinder is stopped fresh bath of cast metal has been formed in the furnace, and the communication between the furnace ıe casing surrounding the cylinder is also closed during that time. Other mechanical equivalents for g the ore slowly forward may be employed instead of the rotating cylinder.

s proposed to make the bottom of the furnace of highly calcined and powdered oxide of magnesia either with a proportion of less highly calcined oxide of magnesia or with lime or silica to bind it ıer.

other part of the invention consists in introducing into the metal bath, just before the termination melting process, certain ingredients, by preference a compound of litharge and nitrate of soda, placed n or lead cannisters or formed into cakes, together with a small proportion of peroxide of manganese her metallic oxides or acids, which ingredients effect the elimination of the sulphur and silicon, the n of the litharge in combining with the carbon and silicon setting free the metallic lead, which in its combines with the sulphur, while the soda combines with the silica produced, these bodies appearing g on the surface of the molten metal. The bath then receives an admixture of ferromanganese, or it is d in any other suitable manner.

introducing the litharge, the communication between the furnace and the regenerators is closed, communication is established with a condenser into which the surplus litharge and alkaline vapours

ıer salts or oxides of soda, potash, or lime may be used in place of the nitrate of soda.

rinted, 1*s.* 10*d.* Drawings.]

A.D. 1868, June 10.—N° 1893.

'H, JAMES, and FIRTH, EDWARD.—(*Provisional protection only.*)—" Improvements in reaping and ving machines."

provements consist in the substitution of a wheel or drum for giving motion to the knife bar instead of , cranked shaft, or spur, and bevel gearing.

the plane of the circumference of the wheel or drum a diagonal groove or recess is formed into which stud or pin, attached to one end of a lever, is fitted, the opposite end of the lever being attached to ıife bar; the rotation of the wheel or drum on its axis causes the lever to oscillate, and thus imparts n to the knife bar.

inted, 4*d.* No Drawings.]

A.D. 1868, June 10.—N° 1894.

)MAN, CLINTON EDGCUMBE.—(*A communication from Ernest Gabriel Roblin.*)—(*Provisional tion only.*)—" Improvements in breech-loading fire-arms."

s refers to guns with tilting barrels, and consists of an arrangement of parts. A round steel bar, t the rear end and provided with teeth at its front end, lies below the barrels. A finger piece g at its rear a projection with teeth to bear upon the teeth of the bar is fitted below the barrels front of the bar. A spring fixed to the barrels enters a recess in the finger piece. The rear of the

bar is enlarged and is received in an oval hole. The bar slides in tenons in a channel formed in a jointed metal piece under the barrels. The to and fro movement to effect the tilting is obtained by pressing on the finger piece, which causes the bar to issue parallelly, being stopped by a pin. The barrels are returned to position by allowing the finger piece to escape, which being pressed by the spring takes up its recumbent position under the barrels.

[Printed, 1*s*. Drawings.]

A.D. 1868, June 10.—Nº 1895.

CLARK, Alexander Melville.—(*A communication from Adolphe Achille Pathi.*)—" Improvements in " pipes used for smoking."

I hinge or otherwise attach a cover to a pipe bowl, which cover I provide with an imitation of a partially consumed cigar, the end corresponding to the ash of the cigar being perforated for the admission of air to the tobacco in the bowl of the pipe, which is smoked as in ordinary, the whole presenting the appearance of a cigar and holder.

[Printed, 8*d*. Drawings.]

A.D. 1868, June 10.—Nº 1896.

BONNEVILLE, Henri Adrien.—(*A communication from Honoré Etienne Piquet.*)—" A new and improved " apparatus for shuffling and dealing cards."

This invention relates to a new and improved apparatus for shuffling and dealing cards, and consists in a box made of wood or any other material, combined with a clockwork movement, and furnished inwardly with transversal wires for shuffling the cards, and with a rotative roller for pushing them outside the box.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 10.—Nº 1897.

TERREL, Edmond Philibert Jean Louis.—" An improved apparatus for heating wine and other " fermentable liquids, part of such apparatus being applicable to other purposes."

This apparatus consists of a suitable chamber for containing water heated by a furnace for heating the wine, which passes through a worm in the chamber. From this worm it is carried by a flexible pipe into another worm placed in a vessel filled with cold water, by which the wine is cooled, and is then drawn off into the bottles.

When the wine is transferred from one cask to another it is heated by a current of steam bathing a number of small tubes through which the wine is made to pass.

An improved joint ts produced by means of a collar of india rubber formed on the junction ends of the tubes, which collars are pressed together by the metallic screw parts of the joint with which the tube is provided.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 10.—Nº 1898.

PROCTOR, William Fash.—(*A communication from the Singer Manufacturing Company* [*Incorporated*].)—" Improved embroidery apparatus to be applied to sewing machines."

A pair of curved rocking arms mounted on the presser foot carry each a thread guide at their extremities, and by means of a reciprocating or rotary tappet they are caused to lap around the stem of the depressed needle the braiding threads which are threaded through their respective guides. These threads lead off from bobbins carried by a frame secured by a clip and clamping screw to the guide box of the machine.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 10.—Nº 1899.

BARTON, William.—" Improvements in kitchen ranges or cooking stoves."

The fire-place is made of a wedge shape with an oven on one side and two boilers on the other side, a flue space being left between them in which there are hot water tubes connected with the top and bottom of the boiler. An outer casing or envelope surrounds the smoke pipe, leaving a space between them, and openings are made in the envelope for the purpose of carrying off vapours arising from the cooking.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 10.—Nº 1900.

GRUBB, Charles Robert Edward.—" An improved manufacture of match box."

The box consists of a tube, to the opposite ends of which hinged lids are fitted. The closing of the lids is ensured by connecting them together internally by a band of india rubber compound.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 10.—N° 1901.

WILLIAMS, Thomas Evan.—"Improvements in the pots employed in the manufacture of tin and other "plates."

My invention relates to pots or crucibles employed in the manufacture of tin and other plate for annealing the plates or sheets of iron previous to coating or covering them with tin or alloy of tin; and the nature of the said invention consists in the peculiar shape or formation of the annealing pots, whereby their strength and durability is greatly increased without adding materially to their weight or cost. Instead of making my improved pots square or rectangular in their cross section with straight sides, as such pots have hitherto been constructed, I make them with curved sides and corners (or with curved corners without the sides being curved), the same being either convex or concave according to the nature of the work for which the pots are to be used. The said pots may be constructed of iron, clay, plumbago, or other suitable material.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 10.—N° 1902.

WESTWOOD, William Henry—"Improvements in gas holders, gas purifiers, and other apparatus "used in the manufacture and distribution of gas for illumination."

One part of this invention consists in preventing the corrosion of gas holders and apparatus by coating or covering with lead, or an alloy of lead, the wrought or cast iron of which the said gas holders and apparatus are made.

Another part consists in the following methods of making the joints of gas holders and apparatus gas tight:—When the plates have not been coated as described, the edges and portions of the sides of the said plates are coated with lead or other easily fused metal or alloy, and after the plates have been rivetted together the overlapping edges are soldered together so as to produce a perfectly continuous metallic junction. Plates coated with lead or alloy of lead may be soldered in the same way. When the plates are not coated a tape or strip of soft metal or alloy is put and compressed between the edges of the plates when they are rivetted; or one or more wires may be placed between the edges of the plates with or without a coating of soft metal or alloy at those parts which come into contact.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 11.—N° 1903.

TURNER, Henry.—"Improvements in the construction of privies and ash-pits."

My invention consists in collecting the fecal matter in a cistern and the urine and ashes in an ashpit. The contents of the cistern are kept separate from the ashes, and the privies are placed so much above the level of the street that a cart may be brought under the end of the cistern, into which cart the fecal matter is drawn by a scraper or otherwise. The privies are ventilated by flues from the back of the seat.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 11.—N° 1904.

BARLOW, Samuel, EDMESTON, Thomas, and BEELEY, Thomas.—"Improvements in furnaces for "steam boilers and other purposes."

These improved furnaces consist of two sets of grate bars, the upper set being tubular and the lower set of the usual construction, as described in the Patent of Samuel Barlow and Thomas Edmeston, granted on the 11th day of April 1867, No. 1076. The tubular grate bars are connected to front and back water chambers, and these chambers are connected to the lower part of the boiler and to top of the flue, thereby causing a circulation of water through the tubular bars. The bridges are arranged to cause the products of combustion to pass from the upper to the lower fires in any required manner to consume the smoke.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, June 11.—N° 1905.

UNSWORTH, William.—"An improved sail brake for use on railways."

The features of novelty in this invention consist in adapting a sail to the top of one of the carriages of a train, and by exposing its surface to the wind it acts as a brake by checking the speed or impetus of the train.

The sail is fastened to a rectangular frame moving on hinges fixed to the roof of the carriage, and is raised or lowered by means of ropes and pullies, the ends of the ropes passing over a drum, the axis of which turns in supports fixed on the roof of the next carriage, and is set in motion by means of a handle, the shaft

bar is enlarged and is received in an oval hole. The bar slides in tenons in a channel formed in a jointed metal piece under the barrels. The to and fro movement to effect the tilting is obtained by pressing on the finger piece, which causes the bar to issue parallelly, being stopped by a pin. The barrels are returned to position by allowing the finger piece to escape, which being pressed by the spring takes up its recumbent position under the barrels.

[Printed, 1*s.* Drawings.]

A.D. 1868, June 10.—N° 1895.

CLARK, Alexander Melville.—(*A communication from Adolphe Achille Pathi.*)—" Improvements in " pipes used for smoking."

I hinge or otherwise attach a cover to a pipe bowl, which cover I provide with an imitation of a partially consumed cigar, the end corresponding to the ash of the cigar being perforated for the admission of air to the tobacco in the bowl of the pipe, which is smoked as in ordinary, the whole presenting the appearance of a cigar and holder.

[Printed, 8*d.* Drawings.]

A.D. 1868, June 10.—N° 1896.

BONNEVILLE, Henri Adrien.—(*A communication from Honoré Etienne Piquet.*)—" A new and improved " apparatus for shuffling and dealing cards."

This invention relates to a new and improved apparatus for shuffling and dealing cards, and consists in a box made of wood or any other material, combined with a clockwork movement, and furnished inwardly with transversal wires for shuffling the cards, and with a rotative roller for pushing them outside the box.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 10.—N° 1897.

TERREL, Edmond Philibert Jean Louis.—" An improved apparatus for heating wine and other " fermentable liquids, part of such apparatus being applicable to other purposes."

This apparatus consists of a suitable chamber for containing water heated by a furnace for heating the wine, which passes through a worm in the chamber. From this worm it is carried by a flexible pipe into another worm placed in a vessel filled with cold water, by which the wine is cooled, and is then drawn off into the bottles.

When the wine is transferred from one cask to another it is heated by a current of steam bathing a number of small tubes through which the wine is made to pass.

An improved joint is produced by means of a collar of india rubber formed on the junction ends of the tubes, which collars are pressed together by the metallic screw parts of the joint with which the tube is provided.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 10.—N° 1898.

PROCTOR, William Fash.—(*A communication from the Singer Manufacturing Company* [*Incorporated*].)—" Improved embroidery apparatus to be applied to sewing machines."

A pair of curved rocking arms mounted on the presser foot carry each a thread guide at their extremities, and by means of a reciprocating or rotary tappet they are caused to lap around the stem of the depressed needle the braiding threads which are threaded through their respective guides. These threads lead off from bobbins carried by a frame secured by a clip and clamping screw to the guide box of the machine.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 10.—N° 1899.

BARTON, William.—" Improvements in kitchen ranges or cooking stoves."

The fire-place is made of a wedge shape with an oven on one side and two boilers on the other side, a flue space being left between them in which there are hot water tubes connected with the top and bottom of the boiler. An outer casing or envelope surrounds the smoke pipe, leaving a space between them, and openings are made in the envelope for the purpose of carrying off vapours arising from the cooking.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 10.—N° 1900.

GRUBB, Charles Robert Edward.—" An improved manufacture of match box."

The box consists of a tube, to the opposite ends of which hinged lids are fitted. The closing of the lids is ensured by connecting them together internally by a band of india rubber compound.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 10.—Nº 1901.

ᴧMS, Thomas Evan.—" Improvements in the pots employed in the manufacture of tin and other "

rention relates to pots or crucibles employed in the manufacture of tin and other plate for annealing s or sheets of iron previous to coating or covering them with tin or alloy of tin; and the nature of invention consists in the peculiar shape or formation of the annealing pots, whereby their strength ability is greatly increased without adding materially to their weight or cost. Instead of making oved pots square or rectangular in their cross section with straight sides, as such pots have hitherto structed, I make them with curved sides and corners (or with curved corners without the sides rved), the same being either convex or concave according to the nature of the work for which the to be used. The said pots may be constructed of iron, clay, plumbago, or other suitable material.

ed, 8*d*. Drawing.]

A.D. 1868, June 10.—Nº 1902.

VOOD, William Henry—" Improvements in gas holders, gas purifiers, and other apparatus in the manufacture and distribution of gas for illumination."

art of this invention consists in preventing the corrosion of gas holders and apparatus by coating ing with lead, or an alloy of lead, the wrought or cast iron of which the said gas holders and s are made.

er part consists in the following methods of making the joints of gas holders and apparatus gas When the plates have not been coated as described, the edges and portions of the sides of the said e coated with lead or other easily fused metal or alloy, and after the plates have been rivetted the overlapping edges are soldered together so as to produce a perfectly continuous metallic . Plates coated with lead or alloy of lead may be soldered in the same way. When the plates are ed a tape or strip of soft metal or alloy is put and compressed between the edges of the plates y are rivetted; or one or more wires may be placed between the edges of the plates with or without of soft metal or alloy at those parts which come into contact.

ed, 6*d*. Drawing.]

A.D. 1868, June 11.—Nº 1903.

R, Henry.—" Improvements in the construction of privies and ash-pits."

vention consists in collecting the fecal matter in a cistern and the urine and ashes in an ashpit. ents of the cistern are kept separate from the ashes, and the privies are placed so much above the he street that a cart may be brought under the end of the cistern, into which cart the fecal matter by a scraper or otherwise. The privies are ventilated by flues from the back of the seat.

ed, 10*d*. Drawing.]

A.D. 1868, June 11.—Nº 1904.

W, Samuel, EDMESTON, Thomas, and BEELEY, Thomas.—" Improvements in furnaces for boilers and other purposes."

improved furnaces consist of two sets of grate bars, the upper set being tubular and the lower set ual construction, as described in the Patent of Samuel Barlow and Thomas Edmeston, granted on day of April 1867, No. 1076. The tubular grate bars are connected to front and back water s, and these chambers are connected to the lower part of the boiler and to top of the flue, ausing a circulation of water through the tubular bars. The bridges are arranged to cause the of combustion to pass from the upper to the lower fires in any required manner to consume the

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A.D. 1868, June 11.—Nº 1905.

)RTH, William.—" An improved sail brake for use on railways."

atures of novelty in this invention consist in adapting a sail to the top of one of the carriages of a d by exposing its surface to the wind it acts as a brake by checking the speed or impetus of the

il is fastened to a rectangular frame moving on hinges fixed to the roof of the carriage, and is lowered by means of ropes and pullies, the ends of the ropes passing over a drum, the axis of which supports fixed on the roof of the next carriage, and is set in motion by means of a handle, the shaft

bar is enlarged and is received in an oval hole. The bar slides in tenons in a channel formed in a jointed metal piece under the barrels. The to and fro movement to effect the tilting is obtained by pressing on the finger piece, which causes the bar to issue parallelly, being stopped by a pin. The barrels are returned to position by allowing the finger piece to escape, which being pressed by the spring takes up its recumbent position under the barrels.

[Printed, 1*s.* Drawings.]

A.D. 1868, June 10.—N° 1895.

CLARK, Alexander Melville.—(*A communication from Adolphe Achille Pathi.*)—" Improvements in " pipes used for smoking."

I hinge or otherwise attach a cover to a pipe bowl, which cover I provide with an imitation of a partially consumed cigar, the end corresponding to the ash of the cigar being perforated for the admission of air to the tobacco in the bowl of the pipe, which is smoked as in ordinary, the whole presenting the appearance of a cigar and holder.

[Printed, 8*d.* Drawings.]

A.D. 1868, June 10.—N° 1896.

BONNEVILLE, Henri Adrien.—(*A communication from Honoré Etienne Piquet.*)—" A new and improved " apparatus for shuffling and dealing cards."

This invention relates to a new and improved apparatus for shuffling and dealing cards, and consists in a box made of wood or any other material, combined with a clockwork movement, and furnished inwardly with transversal wires for shuffling the cards, and with a rotative roller for pushing them outside the box.

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A.D. 1868, June 10.—N° 1897.

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This apparatus consists of a suitable chamber for containing water heated by a furnace for heating the wine, which passes through a worm in the chamber. From this worm it is carried by a flexible pipe into another worm placed in a vessel filled with cold water, by which the wine is cooled, and is then drawn off into the bottles.

When the wine is transferred from one cask to another it is heated by a current of steam bathing a number of small tubes through which the wine is made to pass.

An improved joint ts produced by means of a collar of india rubber formed on the junction ends of the tubes, which collars are pressed together by the metallic screw parts of the joint with which the tube is provided.

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A.D. 1868, June 10.—N° 1898.

PROCTOR, William Fash.—(*A communication from the Singer Manufacturing Company [Incorporated].*) —" Improved embroidery apparatus to be applied to sewing machines."

A pair of curved rocking arms mounted on the presser foot carry each a thread guide at their extremities, and by means of a reciprocating or rotary tappet they are caused to lap around the stem of the depressed needle the braiding threads which are threaded through their respective guides. These threads lead off from bobbins carried by a frame secured by a clip and clamping screw to the guide box of the machine.

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A.D. 1868, June 10.—N° 1899.

BARTON, William.—" Improvements in kitchen ranges or cooking stoves."

The fire-place is made of a wedge shape with an oven on one side and two boilers on the other side, a free space being left between them in which there are hot water tubes connected with the top and bottom of the boiler. An outer casing or envelope surrounds the smoke pipe, leaving a space between them, and openings are made in the envelope for the purpose of carrying off vapours arising from the cooking.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 10.—N° 1900.

GRUBB, Charles Robert Edward.—" An improved manufacture of match box."

The box consists of a tube, to the opposite ends of which hinged lids are fitted. The closing of the lids is ensured by connecting them together internally by a band of india rubber compound.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 10.—Nº 1901.

ILLIAMS, Thomas Evan.—" Improvements in the pots employed in the manufacture of tin and other plates."

My invention relates to pots or crucibles employed in the manufacture of tin and other plate for annealing e plates or sheets of iron previous to coating or covering them with tin or alloy of tin; and the nature of e said invention consists in the peculiar shape or formation of the annealing pots, whereby their strength d durability is greatly increased without adding materially to their weight or cost. Instead of making r improved pots square or rectangular in their cross section with straight sides, as such pots have hitherto en constructed, I make them with curved sides and corners (or with curved corners without the sides ing curved), the same being either convex or concave according to the nature of the work for which the ts are to be used. The said pots may be constructed of iron, clay, plumbago, or other suitable material.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 10.—Nº 1902.

WESTWOOD, William Henry—" Improvements in gas holders, gas purifiers, and other apparatus " used in the manufacture and distribution of gas for illumination."

One part of this invention consists in preventing the corrosion of gas holders and apparatus by coating r covering with lead, or an alloy of lead, the wrought or cast iron of which the said gas holders and pparatus are made.

Another part consists in the following methods of making the joints of gas holders and apparatus gas ight:—When the plates have not been coated as described, the edges and portions of the sides of the said lates are coated with lead or other easily fused metal or alloy, and after the plates have been rivetted ogether the overlapping edges are soldered together so as to produce a perfectly continuous metallic unction. Plates coated with lead or alloy of lead may be soldered in the same way. When the plates are not coated a tape or strip of soft metal or alloy is put and compressed between the edges of the plates when they are rivetted; or one or more wires may be placed between the edges of the plates with or without a coating of soft metal or alloy at those parts which come into contact.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 11.—Nº 1903.

TURNER, Henry.—" Improvements in the construction of privies and ash-pits."

My invention consists in collecting the fecal matter in a cistern and the urine and ashes in an ashpit. The contents of the cistern are kept separate from the ashes, and the privies are placed so much above the level of the street that a cart may be brought under the end of the cistern, into which cart the fecal matter is drawn by a scraper or otherwise. The privies are ventilated by flues from the back of the seat.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 11.—Nº 1904.

BARLOW, Samuel, EDMESTON, Thomas, and BEELEY, Thomas.—" Improvements in furnaces for " steam boilers and other purposes."

These improved furnaces consist of two sets of grate bars, the upper set being tubular and the lower set of the usual construction, as described in the Patent of Samuel Barlow and Thomas Edmeston, granted on the 11th day of April 1867, No. 1076. The tubular grate bars are connected to front and back water chambers, and these chambers are connected to the lower part of the boiler and to top of the flue, thereby causing a circulation of water through the tubular bars. The bridges are arranged to cause the products of combustion to pass from the upper to the lower fires in any required manner to consume the smoke.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, June 11.—Nº 1905.

UNSWORTH, William.—" An improved sail brake for use on railways."

The features of novelty in this invention consist in adapting a sail to the top of one of the carriages of a rain, and by exposing its surface to the wind it acts as a brake by checking the speed or impetus of the rain.

The sail is fastened to a rectangular frame moving on hinges fixed to the roof of the carriage, and is raised or lowered by means of ropes and pullies, the ends of the ropes passing over a drum, the axis of which urns in supports fixed on the roof of the next carriage, and is set in motion by means of a handle, the shaft of which is furnished with an angle toothed pinion, gearing with a similar wheel mounted on the axis of the drum, and causing the latter to revolve, either tightens or slackens the ropes.

When the sail is lowered the uprights of the frame rest on supports fixed to the carriage.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 11.—Nº 1906.

RODGERS, Joseph.—(*Provisional protection only.*)—" Improved constructions of belts, straps, or bands " for driving machinery."

The object of this invention is to substitute a more durable and lighter belt, strap, or band than those in general use. For this purpose, by the first method, gauze or woven wire is inserted in one, two, or more thicknesses cemented together if necessary, and covered over with leather, canvas, india rubber, or gutta percha, the joint of such covering being by preference a "butt" joint. Tacks or rivets secure the covering to the gauze or woven wire; the ends of the strap may form a "lap" and "butt" joint, and are secured by means of a binding strip placed under or over the joint, and by means of tacks or rivets. Such strip may be made either of gauze wire or some thin metallic substance.

The second plan consists in taking a sufficient number of wires to form the breadth of a strap and placing them as warp in a loom (suited to the purpose), and cotton flax or other suitable yarn is woven in as weft; the covering may be as in the previous case.

The third plan consists of a series of wires covered with gutta percha or india rubber, hemp, cotton, or other suitable yarn, and then woven together as warp and weft, thus forming a complete belt or strap.

By the fourth plan strips of thin steel or hoop iron are placed at slight intervals from each other between two thicknesses of leather or canvas, the whole being secured by rivets through the interstices alluded to.

By the fifth plan gauze or woven wire is coated with gutta percha or india rubber, and thus forms a belt or strap.

By the sixth plan sheet copper, brass, tin, or zinc are substituted for the gauze wire named in the first plan.

Lastly, for round bands one or more wires coated as before mentioned or covered with hemp, cotton, or other suitable yarn are used.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 11.—Nº 1907.

CLARK, Alexander Melville.—(*A communication from François Fabre.*)—(*Provisional protection only.*)—" Improvements in the manufacture of bricks used for building and other purposes."

In making bricks or flooring tiles I utilize the dross of blast furnaces which I first reduce to a fine granular condition by plunging it in water while still in fusion and incandescent. The sand so obtained I proceed to agglomerate with hydraulic or other lime either by hand or in a mixing machine. After this the material is moulded into the desired form and stacked for the purpose of drying.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 11.—Nº 1908.

PARIS, Stanislaus Joseph, **DRUMMOND,** David, and **HAMER,** Daniel.—(*Provisional protection only.*)—" Certain improvements in valves."

The novelty of the invention consists in introducing the liquid or fluid through the centre of and in a direction concentric with the axis or bore of the valve and at right angles to the direction of its motion, and in such a manner that the pressure may be exerted evenly around the internal surfaces of the valve, whereby the bearing or frictional surfaces are relieved from pressure.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 11.—Nº 1909.

SOUTHBY, Edmund Richard.—(*Provisional protection only.*)—" Improvements in utilizing oleaginous " acid waste."

This invention consists in suitably heating the waste so as to throw off the sulphur compounds in the form of sulphurous acid gas, which may be used as such or be converted into sulphuric acid in the usual way.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 11.—Nº 1910.

ERSON, WILLIAM.—"Improvements in apparatus for finishing woven fabrics." nvention relates to apparatus for finishing woven fabrics of the kind in which the fabric is held by upon two endless chains. The present improvements relate more particularly to the holding details, ist in fixing improved holders directly down upon the top of the links composing the endless chain. roved holders comprise parts which are fixed to the links one on each link, and which are formed s constituting the lower holding jaws, and each fixed part has jointed to it two movable parts ing the upper holding jaws.

ed, 8*d*. Drawing.]

A.D. 1868, June 11.—Nº 1911.

NGS, JAMES SEPTIMUS, and UMBACH, ANTHONY.—"Improvements in sewing machines, and tain parts of the same, which said parts are also applicable to other sewing machines now in use." ovelty of this invention consists in the general simplicity of construction, the actuation of the shuttle rier in connection with a fly wheel cam, the means of giving motion to the needle bar, and the tension lating the drawing off of the thread from the bobbin during the time the machine is at work.

ted, 1*s*. Drawing.]

A.D. 1868, June 11.—Nº 1912.

N, WILLIAM EDWARD. — (*A communication from Charles Dearborn Peasley.*) — (*Provisional only.*)—"An improved adhesive cement applicable to uniting china, leather, and other hard and bstances."

nstituents of this improved cement may be briefly stated as consisting of glue, isinglass, white lead, llac, gum arabic, gum tragacanth, water, alcohol, and glycerine.

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A.D. 1868, June 11.—Nº 1913.

JAMES.—"Improvements in applying soap, oil, or similar materials to cotton, wool, and other s substances requiring such treatment in their preparation for spinning, and in machinery or tus connected therewith."

nvention consists in applying soap, oil, or other such substance to fibrous materials while they are ate of fleece or opened mass during their preparation for spinning.

ed, 8*d*. Drawing.]

A.D. 1868, June 11.—N 1914.

RD, ARNOULD EUGÉNE GEORGES.—(*Letters Patent void for want of Final Specification.*)—"An ved system or method of and apparatus for effecting the combustion of fuel for the more perfect tion thereof."

nvention consists in effecting the complete and perfect combustion of fuel by dividing the process ustion into a "preliminary combustion," by which the solid fuel is converted into combustible d a "final combustion" wherein these gases are completely burnt, such two processes of combustion ected in combination in such a manner that the final combustion of the gases takes place in immetact with the heated solid fuel that is undergoing the preliminary combustion. The air required preliminary combustion is for this purpose made to enter at the top of the deep layer of fuel d in a fire brick chamber, while the air required for the final combustion enters at the bottom of the hat the combustible gases produced above are made to descend through the fuel to the place of ion where most intense heat is produced.

ed, 4*d*. No Drawings.]

A.D. 1868, June 11.—Nº 1915.

ER, FREDERICK.—(*Provisional protection only.*)—"Improvements in obtaining water." rovisional Specification describes forming a bore hole into the earth and lining it with a metal tube sual manner. Within the lining tube is inserted a pipe, terminating by preference at a short above the water level. An airtight joint is made between the lining tube and the pipe. A pump ted with the top of the interior pipe, or the pump barrel may be at the lower end or intermediate ipe.

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of which is furnished with an angle toothed pinion, gearing with a similar wheel mounted on the axis of the drum, and causing the latter to revolve, either tightens or slackens the ropes.

When the sail is lowered the uprights of the frame rest on supports fixed to the carriage.

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The object of this invention is to substitute a more durable and lighter belt, strap, or band than those in general use. For this purpose, by the first method, gauze or woven wire is inserted in one, two, or more thicknesses cemented together if necessary, and covered over with leather, canvas, india rubber, or gutta percha, the joint of such covering being by preference a " butt " joint. Tacks or rivets secure the covering to the gauze or woven wire; the ends of the strap may form a " lap " and " butt " joint, and are secured by means of a binding strip placed under or over the joint, and by means of tacks or rivets. Such strap may be made either of gauze wire or some thin metallic substance.

The second plan consists in taking a sufficient number of wires to form the breadth of a strap and placing them as warp in a loom (suited to the purpose), and cotton flax or other suitable yarn is woven in as weft; the covering may be as in the previous case.

The third plan consists of a series of wires covered with gutta percha or india rubber, hemp, cotton or other suitable yarn, and then woven together as warp and weft, thus forming a complete belt or strap.

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A.D. 1868, June 11.—N° 1908.

PARIS, Stanislaus Joseph, DRUMMOND, David, and HAMER, Daniel.—(*Provisional protection only.*)—" Certain improvements in valves."

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A.D. 1868, June 11.—N° 1909.

SOUTHBY, Edmund Richard.—(*Provisional protection only.*)—" Improvements in utilizing oleaginous " acid waste."

This invention consists in suitably heating the waste so as to throw off the sulphur compounds in the form of sulphurous acid gas, which may be used as such or be converted into sulphuric acid in the usual way.

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DERSON, William.—"Improvements in apparatus for finishing woven fabrics."
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Printed, 8*d*. Drawing.]

A.D. 1868, June 11.—N° 1911.

KINGS, James Septimus, and **UMBACH**, Anthony.—"Improvements in sewing machines, and
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he novelty of this invention consists in the general simplicity of construction, the actuation of the shuttle
a carrier in connection with a fly wheel cam, the means of giving motion to the needle bar, and the tension
regulating the drawing off of the thread from the bobbin during the time the machine is at work.
[Printed, 1*s*. Drawing.]

A.D. 1868, June 11.—N° 1912.

WTON, William Edward.—(*A communication from Charles Dearborn Peasley.*)—(*Provisional
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The constituents of this improved cement may be briefly stated as consisting of glue, isinglass, white lead,
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[Printed, 4*d*. No Drawings.]

A.D. 1868, June 11.—N° 1913.

RD, James.—"Improvements in applying soap, oil, or similar materials to cotton, wool, and other
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A.D. 1868, June 11.—N 1914.

IENARD, Arnould Eugéne Georges.—(*Letters Patent void for want of Final Specification.*)—"An
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This invention consists in effecting the complete and perfect combustion of fuel by dividing the process
combustion into a "preliminary combustion," by which the solid fuel is converted into combustible
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the preliminary combustion is for this purpose made to enter at the top of the deep layer of fuel
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mbustion where most intense heat is produced.
[Printed, 4*d*. No Drawings.]

A.D. 1868, June 11.—N° 1915.

ARNER, Frederick.—(*Provisional protection only.*)—"Improvements in obtaining water."
This Provisional Specification describes forming a bore hole into the earth and lining it with a metal tube
the usual manner. Within the lining tube is inserted a pipe, terminating by preference at a short
tance above the water level. An airtight joint is made between the lining tube and the pipe. A pump
connected with the top of the interior pipe, or the pump barrel may be at the lower end or intermediate
this pipe.
[Printed, 4*d*. No Drawings.]

A.D. 1868, June 11.—N° 1916.

MORRIS, Thomas.—(*Provisional protection refused.*)—"The application and use of buoys and submerged "vessels for supporting objects and erections in deep water."

The application of the ascensive power of such vessels to the support of objects and erections in deep water.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 11.—N° 1917.

STOCKER, Alexander Southwood.—"Improvements appertaining to infants' feeding bottles, and in "the manufacture, combination, and employment of the whole or part of the articles to be used therewith; "part of which may also be beneficially employed for other purposes."

This invention relates to producing out of certain kinds of sheet metal certain covers with screws provided thereon or therein by the aid of external and internal pressure effected by mandrils, hobs, and following dies and tools; and the employment of them with feeding bottles and other receptacles known as "burst offs;" also in providing in such covers for feeding bottles, holes through which the infants' ordinary sucking tubes are to pass, such holes being eyeletted or other provisions made so as to prevent the abrasion of the india rubber tube or other material or article necessary to be used therewith; also in the manufacture and employment of round discs or other shaped pieces of vulcanized india rubber or other elastic material previously prepared in such manner as to facilitate suction while the vessel is being used; such pieces of india rubber or other material are intended to be held or gripped by the aid and action of the screws on the blow or burst off bottles and the screws produced on the cover to be employed therewith. These pieces receive their configurations in their entirety at one operation by the aid of suitable cutting apparatus. It is desirable for my invention that the metal out of which the covers are to be made be elastic before their manufacture has been commenced upon, as also the partially made cover when at a stage in readiness to receive the screw to be provided thereon or therein. Covers so made will be found exceedingly economical when applied to bottles generally; in these cases the holes referred to in the crowns of the covers will not be made therein.

The invention also consists in combining with glass or other metal screw or other covers to be employed with feeding bottles, vulcanized india rubber attached thereto globularly or otherwise, so shaped as to rest against the infant's features, thereby rendering greater comfort when in use.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—N° 1918.

CHASE, Daniel La Forest.—(*Provisional protection only.*)—"Improvements in governors for steam "and other engines."

The nature of my said invention consists chiefly in the novel construction and arrangement of the parts of an engine governor, whereby the work of opening and closing the throttle valve is entirely effected by the engine, which at the same time is completely under the control of the governor. The latter being releived from the resistance offered by the friction and weight of the valve and spindle is rendered more sensitive to slight variations in the speed of the engine, whose motion is thereby rendered more regular and uniform than has hitherto been practicable. A shaft which drives the vertical spindle of the governor rotates a pinion between two racks (preferably curved) carried by a segment fixed on the throttle valve spindle. The said racks are arranged excentrically or obliquely to the said spindle, and a space is left without teeth at one end of each rack. The pinion is connected with the pendulum balls, and as the same rise or fall is thrown into gear with one or other of the racks or kept midway between the two, thereby opening or closing the valve or keeping the same partially open.

Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—N° 1919.

JOHNSON, John Henry.—(*A communication from John Vaughan Merrick and William Henry Merrick*) —"Improvements in miners' safety cages, lifts, and other like hoisting apparatus."

This invention relates to mechanism for arresting miners' cages, lifts, and other like hoisting apparatus in their descent when the hoisting rope breaks; and consists essentially in bringing the arresting levers or slides into action by the gravity of the counterweights of the cage or lift, in lieu of using springs for that purpose, such counterweights being connected by cords with the arresting mechanism. The levers or slides are either toothed so as to engage into racks, or are provided with wedges for nipping the guide ropes when wire guide ropes are employed.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 12.—N° 1920.

FLEURY, Anthony Leonard.—(*Provisional protection only.*)—" Improvements in treating quartz and siliceous substances to obtain hydrate of silica, and in applying the same to various useful purposes."

According to this invention quartz, sand, or pulverized flint or quartz are mixed with gas tar, petroleum, r its refuse, or any other suitable carbonaceous substance or hydrocarbon sufficient to make a stiff paste, hich is then moulded into suitable shapes such as small balls or pieces, and placed in a crucible or tube of lumbago or other refractory material, to be heated by a furnace until a bright red heat is obtained. ulphur vapour or bisulphide of carbon or sulphuretted hydrogen gas is then introduced by means of a ube or opening, and the heat and carbon will cause the withdrawal of oxygen and form carbonic oxide, hile the sulphur will combine with the silicium and form sulphide of silicium in the form of a greyish hite powder, which being brought in contact with water or steam decomposes the oxygen and hydrogen hereof, forming sulphuretted hydrogen and hydrate of silica, which is applicable to the manufacture of lass, porcelain, artificial stone, paints, cements, fire-proof and water-proof coatings, and various other useful purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—N° 1921.

FLEURY, Anthony Leonard.—(*Provisional protection only.*)—" Improvements in the means of and apparatus for treating gold and silver ores, and in utilizing the products resulting therefrom."

According to this invention powdered gold or silver ores are mixed with fluoride of calcium, fluorspar, ryolite, or refuse from the working of cryolite, mixed with water and placed in a boiler containing an gitator.

Steam and carbonic acid are then introduced until the whole is dissolved into an opalescent milky liquid. When cool the whole is passed through an amalgamating bath containing mercury, whereby he gold is taken up and recovered by subliming the mercury in a retort.

The residue, mixed with lime, oxides of iron, zinc, or lead, forms a paint; mixed with sand and clay it rms a cement; mixed with white quartz sand and compressed, it forms a white flint marble for statuary nd ornaments.

It is also useful for various useful purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—N° 1922.

RAY, James, and WEIR, Rankin.—" Improvements in treating ores and in refining crude metals in order to obtain steel, copper, tin, and lead, and in apparatus therefor."

One part of the invention relates to the treatment of the ores in a smelting or similar furnace, such ores ing by preference previously calcined; and consists in causing to be injected into the furnace in the form spray a hydrocarbon oil, and along therewith or instead thereof one or more of certain acids or alkalies. he acids and alkalies to be thus used are acetic and other organic or fatty acids, and potash soda and monia.

By the second part of the invention the crude metal is to be run in a melted state into a ladle or vessel ed with firebrick or other suitable refractory material, and is therein to be subjected to a further treatment th any one or more of the materials used in carrying out the first part of the invention, such material ing made to play on the surface and to be injected below the surface by means of a tubular rabble or milar tool, through which it is forced. After this treatment the melted metal is to be run into a chamber vessel lined with charcoal, such charcoal being saturated with hydrocarbon oil.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—N° 1923.

NDERSON, John.—(*Provisional protection only.*)—" Improvements in machinery employed for preparin and spinning hard waste or cop bottoms."

This invention relates to the preparation of hard waste in endless cardings without the use of the piecing achine, and in the spinning of such cardings on the mule or throttle. I employ three sets of draw rollers as to dispense with the stop motion, plunger, and apparatus connected therewith.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—Nº 1924.

DAVIES, George.—(*A communication from Philippe Louis Henri Charles Lavagne.*)—" Improve
" cranes."

The crane which forms the subject of the present invention combines in one apparatus the differe ments of which machinery of this description is susceptible; that is to say,—

Firstly, raising and lowering of the load.

Secondly, variation at will of the range by the oscillation of the jib.

Thirdly, complete revolution or rotation in both directions.

Fourthly, portability or mobility of the apparatus.

The post or pivot is composed of two uprights connected by cross pieces and diagonal ties; it h its lower part the trunnion or pivot on which the apparatus rotates. Towards the centre of the p a circular plate or turntable, which surrounding the post allows of the rotation of the crane. bears against and turns upon friction rollers which themselves roll in and bear against a hollow c fixed at the upper part of the timber framework or carriage of the crane. Above this plate o platform the post carries in sockets the pin or axis by means of which the jib is jointed to the po sockets may be fixed on the turntable if preferred.

The jib is formed like the crane post of two cheeks or side plates connected together by cross carries at its lower extremity on the axle a carrier pulley for the lifting chain. At its other en another pulley for the same purpose, and placed intermediately are rollers to support the lifting ch upper part of the jib is also furnished with tension bars to connect its fore end with the chain for r lowering the jib.

The function of this chain is to give to the jib whether loaded or otherwise all the positions necessary by the required variations of the range, and to hold the said jib in the different positions

There is also a parachute arrangement by which all accident resulting from the chain which su jib is avoided.

Below the revolving plate or turntable is placed a drum the axle of which is supported in beari on the uprights of the crane post; this drum is intended to wind and unwind the hoisting ch passes round carrier pulleys placed on the jib, and carries at its free end the hook for suspending on the shaft of this drum is keyed a pinion or worm wheel gearing with a worm which is itself dr steam engine. This steam engine is fixed on one of the uprights of the crane post, and is driv desired direction by means of a lever set on the revolving platform within reach of the driver, controls the raising and lowering of the load suspended from the hook.

Below the revolving platform or above the same, as the case may be, is mounted a chain pinion th which is supported in sockets fixed to the uprights. This pinion gears into the chain which supports t of the jib, and is intended to lengthen or shorten it so as to control the oscillation or range of the j the axle of the pinion is keyed another pinion or worm wheel in gear with a worm driven by a secon engine fixed on the opposite upright and governed by a second lever on the revolving platform, whi is also within reach of the driver who thus controls the oscillation of the jib and consequently the the crain.

The complete rotation of the crane in both directions is obtained by means of a pinion which gear fixed spur wheel on the platform or carriage of the crane. The axle of the pinion carried by the fr a third steam engine is driven by this engine by means of intermediate gearing. This engine (inten to effect the transportation of the crane) is driven like the two former by means of a third handl within reach of the driver on the revolving platform. This engine is provided with disengaging ap by which it may be caused either to drive the displacement or the revolving motion, or be completely from both.

[Printed, 1s. 4d. Drawings.]

A.D. 1868, June 12.—Nº 1925.

PYKE, Lionel, and PYKE, Alfred. — (*Provisional protection only.*) — " Improvements in shir
" buttons, and other fastenings of a similar nature."

In lieu of the back of the stud as ordinarily made, to have such back formed in halves, hinged neck of the stud, folded down when required to pass through a hole, and opened after passing throu

[Printed, 4d. No Drawings.]

A.D. 1868, June 12.—Nº 1926.

CUTMORE, George William.—(*Provisional protection only.*)—" Improvements in apparatus for
liquids, in connecting pipes or tubes thereto, and in joining or connecting pipes for other purposes."

This apparatus consists of a vessel formed of a series of coils of, by preference, a semicircular shape, and made from corrugated sheet metal with an inner lining; the inner vessel thus formed is the receiver for ice. The liquid circulates through the spiral tube and becomes cooled by reason of the distance it has to travel through the same. A flanged clip is employed for uniting two tubes by slipping it over a piece of flexible tubing passing over the end of each pipe or tube to be united, the flanges being kept together by a nut or screw.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—Nº 1927.

SPARTALI, Nicholas Demetrius.—" Improvements in apparatus for burning hydrocarbon oils for " the generation of heat."

The apparatus consists of a series of burners formed, say, of thimble shaped tubes, open at their upper ends and communicating with each other by horizontal branch pipes through which the oil is supplied to the burners.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 12.—Nº 1928.

LAKE, William Robert.—(*A communication from Frederick Wittram.*)—" An improved anchor."

My invention relates to anchors for steam ships, boats, and other vessels, and has for its object the production of an anchor which will be cheap and efficient, and which may be easily stowed and be made to occupy but small space when not in use, while from its peculiar construction in whatever way it may fall on the ground or bottom one or both arms or flukes will immediately take and hold. These objects are accomplished by placing the two arms or flukes in longitudinal openings in different portions of the shank and at right angles to each other, so that the said arms or flukes may swing out on either side by gravitation as the anchor falls, while when not in use they lie within the body of the shank.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 12.—Nº 1929.

BENT, Samuel Shaw.—(*Provisional protection only.*)—" Improvements in poultry houses or coops, and " the nests and feeding pans therefor."

Iron plates with long slots are used for the sides of the coop or house, and openings are left at the bottom to be closed at night to keep out rats and other animals. The feeding troughs are made of iron with two sections for food and water, and the nests are made as iron boxes with rounded corners, landing shelves, divisions between one nest and the next, and a covered opening to each nest in the partition upon which the nests are hung to give access from outside.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—Nº 1930.

ROSTAING, Clement, and VIVET, Elie.—" An improved material suitable for making steam, water, " and gas tight joints and for similar uses."

According to this Provisional Specification wire cloth is combined with sheet lead.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 12.—Nº 1931.

RICHARDS, Westley.—" Improvements in breech-loading fire-arms and projectiles."

This Provisional Specification describes improvements in arms such as are described in the Specification of a former Patent, Nº 1960, 1866. Also improvements in arms in which the breech is closed by a block mounted on a transverse horizontal axis at its hinder end, and which falls to expose the breech end of the bore.

Also a bullet or projectile with a shoulder upon it to clear the fouling from the barrel.

[Printed, 2*s.* Drawings.]

A.D. 1868, June 13.—Nº 1932.

HUMFREY, Charles.—(*Provisional protection only.*)—" Improvements in the preparation of a flexible " compound applicable to waterproofing and other purposes."

On the manufacture of stearic acid from neutral oils and fats by what is known as the acid process, a large quantity of residuary pitch remains in the stills after the volatile fatty acids have been distilled over.

Each different oil or fat when submitted to the acid process before mentioned will leave a different residue though all similar in chemical constitution. Any of these pitchy residues may be employed for the purposes of this invention, but I prefer the pitch resulting from the acidification and distillation of palm oil.

To render these products or pitchy residues flexible and soluble in any ordinary solvents, such as turpentine, naptha, petroleum or coal oil, spirits or mixtures of the same, I mix them with the residuary pitch obtained in the distillation of the crude oil or tar obtained from boghead and other oil producing coals. Any of these may be used with success. The residuary pitch obtained in the distillation of native petroleums may be used, but is not so good as the coal oil product. By far the best material for rendering palm oil and other similar residues flexible and soluble is ordinary gas tar, and as of all other materials I prefer to use this in combination with palm oil pitch I will describe in detail the process I employ.

The palm oil pitch can be obtained from any manufacturer of stearic acid, and does not much vary in quality. The gas tar is also pretty uniform in quality and I treat it as follows :—

First. The naptha and part of the dead oil are driven over in an ordinary still, but as it is desirable to conduct the process with as little heat as possible, the operation is continued in a shallow open pan provided with a furnace. The heat is continued with constant stirring until more of the dead oil and all the creosote and napthaline are evaporated. When cold this tar will be of the consistency of very thick treacle.

Without changing the boiling pan a quantity of palm oil pitch is then to be added. I find in practice that about two thirds of palm oil pitch to one third of gas tar will answer. The evaporation of the mixed materials is then continued until about four hundredweight from every twenty hundredweight have passed away. From time to time a small sample as large as a sixpence should be dropped on to a cold plate of iron, and in a few minutes if the boiling is sufficient this sample, though still hot, will not stick to or soil the finger, and when quite cold will be pliant and flexible.

For insulating purposes it is important that this compound should be free from impurities, especially metallic impurities, such as oxide of iron, which is almost always present in gas tar. To effect this purification I take a copper boiler with vertical sides about five or six feet deep and four or five feet diameter, with a flattish bottom heated by a furnace and provided with a pipe and draw off cock placed about a foot from the bottom.

This boiler is filled with the compound, and is slightly heated so as to effect the liquifaction of the compound. The fire is then withdrawn, the dampers and ash pit closed, the top closely covered in, and the contents left quiescent for about twenty four hours. The metallic and most of the earthy and other insoluble impurities will settle; the supernatant compound can be then drawn off and applied for insulating purposes, and the residue may be used for any other ordinary purpose, such as varnish making, waterproofing, and the like.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 13.—Nº 1933.

TOFT, James.—" Improvements in lathes for turning and boring wood and other materials."

This invention consists,—

Firstly. In a combination of a grooved rod or revolving shaft, with pinion in sliding connection thereon, and arranged to operate a wheel carried by the tail stock, the said wheel serving to drive several cams that actuate the cutter or cutters, and discharger for completing and discharging work after it has been roughed by a die carried by the tail stock in front.

Secondly. In a combination with the tail stock feeding screw of a wheel or pinion constructed to have a spring like action, and clutch gearing therewith for breaking the shock on throwing the feeding screw into gear.

Thirdly and Fourthly. In a combination of a slotted lever and other slotted or adjustable attachments for operating the mandril, so as to effect and regulate the feed of the latter, and for breaking the connection of the same with the driving mechanism in case of the sticking of the work or other undue resistance.

Fifthly. In a swinging tool holder carried by the tail stock for dressing or forming the exterior of the article, being made in combination with certain adjustable devices and a cam and spring for operating the same.

Sixthly. In a combination of devices or devices in part with a yielding or breaking coupling pin to sever the connection of the tool holder with its driving attachments in the event of any undue resistance to its tool or tools.

Seventhly and Eighthly. In the adaptation of an adjustable cutter off to the work, and means for driving or operating the same, and also for relieving the cutter thereof in case of too severe obstruction to it during the performance of its work.

Ninthly. In a novel mode of attaching or securing the roughing die in the tail stock to facilitate the changing of the said die and the central location of it relatively to the chuck or mandril.

Tenthly. In such a combination with the cutter off and work discharger of the cams which operate these devices and alternate the action of the tail stock or its roughing die and independent cutters and levers or

rated by the said cams, so that the cutter off cam through its lever is made to operate the work
cam to throw back the said discharger after the general driving motion to the cams has been

ly. In an automatic work discharger, in combination with certain devices for operating the

. In a combination of a notched or toothed bar with a roughing die and independent cutter or
work discharger for determining the measure of the work and alternating the action of the
ie and independent cutters or the latter and work discharger.
thly. In a transversely and longitudinally adjustable tool holder connected and operating in concert
andril of the tail stock for dressing or forming the exterior of the article whilst the same is being
llowed out.

1*s.* 4*d.* Drawing.]

A.D. 1868, June 13.—Nº 1934.

.L, Charles Hyndman.—(*Provisional protection only.*)—"Improvements in steam engines."
ention has for its object to construct and work steam engines in an improved manner with the
nomising fuel. The principal feature of novelty is a peculiar mode of combining a high-pressure
d a low-pressure cylinder with one port face, so that one valve may serve both cylinders, and so
pansion of the steam, which is admitted directly from the boiler to only one end of the high-
linder, may be carried to an unusually great extent without the great variation in the strain on
hafts associated with ordinary modes of working very expansively.

4*d.* No Drawings.]

A.D. 1868, June 13.—Nº 1935.

OUSE, Cornelius.—" Improvements in boring bits and augers."
ntion consists in making boring bits or augers of a hollow forked figure or of a rectangular
on opposite sides, the bottom end or nose of the fork or frame being provided with a helical or
de or blades or cutting edges, and with or without a central worm.
or acting end of the bit or auger is made either flat, convex, or pointed.

1*s.* Drawings.]

A.D. 1868, June 13.—Nº 1936.

Matthew, and MACKIE, John.—(*Provisional protection only.*)—" Improvements in apparatus
e to steam boilers for utilizing the waste heat and for economising fuel."
re of novelty which constitutes this invention is the forming of the flue division at the rear of
f suitably shaped metallic chambers in place of a brick wall as hitherto; the feed water passes
ipe suitably placed in the flue, so that it is considerably heated before reaching the boiler.

4*d.* No Drawings.]

A.D. 1868, June 13.—Nº 1937.

Wilhelm, and ENGLERT, Gottlob.—" An improved apparatus for cooling beer and other
ors."
aratus consists of a number of troughs or vessels open at the top and placed side by side at a
nce apart; they are connected together from side to side at the top, and are formed with double
ottoms, the connecting pieces being also double; the intervening space thus formed is for the
he cooling water; these vessels are so made as to be easily disconnected and removed; a pipe
the bottom for the discharge of the water at the end of the operation.
f the said troughs is placed a smaller trough, the space left between them and the large troughs
ontain the beer; these small troughs are for containing water; they are connected one to the
ipe with a screw union to facilitate their disconnection; the small troughs can be raised and
a horizontal shaft, to which they are connected by any suitable arrangement. The interiors of
ughs are also connected together by a pipe for the discharge of the beer at the end of the
he openings into these pipes during the operation being closed by flanges on the small troughs.
ng water enters during the operation by two pipes at one end of the apparatus, and the beer
e other end and passes between the two currents of cold water; suitable discharge nozzles are
r the discharge of the water and beer during the operation.
l troughs have valves at their lower parts for the discharge of the water they contain at the end
tion.

10*d.* Drawing.]

A.D. 1868, June 13.—N° 1938.

HOWDEN, James.—" Improvements in steam or other motive-power engines."

The improvements consist in new methods of arranging and actuating the valves in steam or other motive-power engines, by which the power usually expended in giving motion to the valves in these engines is greatly reduced, and the action of the steam, air, gas, water, or other fluid in the cylinder rendered more effective.

[Printed, 2s. 4d. Drawings.]

A.D. 1868, June 13.—N° 1939.

YATES, William.—(*Provisional protection only.*)—" Improvements in the furnaces to be used in metal-" lurgic operations."

Puddling or other iron furnaces are lined with bars or blocks of wrought iron or steel.

[Printed, 4d. No Drawings.]

A.D. 1868, June 13.—N° 1940.

MALSTER, Kezia.—" An improved mixture or compound for cleaning gloves and other articles."

Fatty acid, dry soda, and chloride of sodium are immersed about 36 hours in water and reduced by a mill to the consistence of cream; spirits of wine are then added, and the mixture again submitted to the action of the mill.

[Printed, 4d. No Drawings.]

A.D. 1868, June 13.—N° 1941.

PARLOUR, Joseph Thomas.—" Improvements in elevators and apparatus for shovelling, raising, and " conveying grain, coal, bricks, sand, mortar, and other substances."

This invention relates to apparatus employed for moving, raising, and conveying substances by means of buckets or other bodies attached to a flexible chain or band, and to spouts or shoots used in connection therewith.

[Printed, 1s. Drawing.]

A.D. 1868, June 13.—N° 1942.

DENNIS, Thomas Hungate Preston.—" An improved horizontal tubular boiler."

My invention has for its object improvements in the construction of boilers for the purposes of heating hot water pipes or other surfaces, and consists of a series of cast or wrought iron or other metal, tubular rings with blocks, sockets, flanges, or other connections at one or more points, by which the tubular rings may be attached to each other, so that any number of rings may be readily put together to form one boiler. The boiler may be square, oval, round, triangular, or any other shape or form, the tubes also of which the rings are composed may be varied in shape or form from time to time without departing from the principle. Top or bottom water boxes or chambers and fire bars with waterways through them may also be connected thereto. The usual sockets for the flow or return pipes can be affixed to any of the tubular rings, or the tubular rings may be cast with the sockets upon them.

[Printed, 8d. Drawing.]

A.D. 1868, June 13.—N° 1943.

LAKE, William Robert. — (*A communication from Nathaniel Miller Burr.*) — " Improvements in " machinery for hulling or scouring wheat and other grain."

The said invention relates to a grain-hulling or scouring machine, in which a rough surfaced cone revolves inside of a revolving cone-shaped screening cylinder, but in a direction contrary to that of the latter, into and between which cylinder and cone the grain to be hulled or scoured is fed by a forced feed and from the chamber containing the said cone and cylinder, the cleanings, scourings, hulls, dust, and other refuse are drawn by a forced current of air created by a suction fan, whilst the cleaned or hulled grain is carried out of the machine at a separate and remote point from where the cleanings or scourings are taken off.

[Printed, 8d. Drawing.]

A.D. 1868, June 13.—N° 1944.

FISHER, Eugene.—(*Provisional protection only.*)—" An improved tonic effervescing drink."

According to this invention the tonic bitter, extract of orange or other similar tonic extract of flavored fruits, is mixed with syrup in such proportions to suit the taste and then placed in champagne bottles or other strong bottles, after which filtered water highly aerated is forced into the bottles and they are corked and secured.

filtered water is first charged with carbonic acid gas in a receiver under moderate pressure and
d afterwards in a second cylinder to doubly charge it with carbonic acid gas.
ted, 4*d.* No Drawings.]

A.D. 1868, June 13.—N° 1945.

ARTZ, Carl Edward.—(*Provisional protection only.*)—" An improved mode of and means for
ing crystal brocatel colors."
dvantage which these colours have over all other brocatel and broze colours is that they are
l from *mica*, which is cheap, being found in large quantities, and that they are not affected by
y exhalations. The colours display great brilliancy, and the "silvery" in particular are capable of
the destructive action of almost any agent that they would be likely to come in contact with.
ted, 4*d.* No Drawings.]

A.D. 1868, June 13.—N° 1946.

John, the younger.—(*Provisional protection only.*)—" Improvements in machinery or apparatus
oyed in the cutting-off the superfluous portions of threads from spots, sprigs, figures, or other
es made on lace or other fabrics."
ving shaft works a shaft carrying radiating or angularly disposed blades, plain on one side and
on the other. This shaft through a second shaft works a roller, over which the fabric passes having
sed over another roller. Both rollers are covered with wire card and receive the fabric from other
he bearings of one of which can be turned outward to receive the fabric. Above the first wire card
a brush, driven from the second driving shaft, to brush the fabric before it reaches the knife roller,
hich it passes. It also passes under a stationary knife. This knife and knife roller are adjustable
y and horizontally, and with the brush roller can be raised clear of the central standards by a lever
wise for passing back the fabric over the lower rollers. The fabric as it passes under the knife
ver a bar or bridge. It is drawn through the cutting machine by passing it between rollers, whereof
r is driven by the second driving shaft. The fabric may be passed through diagonally from selvage
ge, the knives and brush roller being raised for a fresh portion to be operated on.
ted, 4*d.* No Drawings.]

A.D. 1868, June 15.—N° 1947.

RD, William.—" An improvement in horse collars."
ature of the invention consists in a collar as made with a desiccative or medicated lining where it is
r bear against the neck of a horse or animal.
ted, 6*d.* Drawing.]

A.D. 1868, June 15.—N° 1948.

ASSIN, Léon Stanislas.—(*Provisional protection only.*)—" Improvements in the process of and
atus for producing combustible and illuminating gas."
hemical formula of this gas is $C^6H^8O^6HO$, that is to say, it contains 6 equivalents of lypil, 8 of
n, 6 of oxygen, and 1 of water, and is produced by simultaneously casting on incalescent coke
d in a retort heated to a red heat a mixture of water and glycerin, and a jet of olein oil, or carbureted
n.
etort or retorts are placed in a kiln, and are filled with pieces of coke, broken up and mixed with
ts of iron, and are heated to a red heat by means of an oil or coke fire placed in a grate beneath
The foremost end of each retort has a knee pipe attached to it by means of bolts, and forms a plug
which two iron tubes pass, entering a short way into the retorts. The exterior parts of these tubes
shed with taps, and are bent in the shape of a U, and terminate with funnels arranged below the
wo reservoirs, the first of which contains a mixture of glycerin and water, and the second, which is
e retorts, so as to be kept constantly heated, is filled with olein, the proportions being 100 parts of
3 of glycerin and 1 of olein.
ps being opened, the liquid flows from the reservoirs by the tubes, and is regulated so as to pour
antly in the proportions above named.
ning in contact with the heated coke and iron a reaction takes place, so that the water saturated
cerin resolves into hydrogen gas, bicarburet of hydrogen, magnetic iron, and a little carbonic acid;
matter furnishing the bicarburet of hydrogen also decomposes.
as formed escapes at the back of the retorts by means of tubes connecting them with a collecting
ch conducts them to a bath or cistern of water hermetically closed, and in which the end of the

collecting pipe plunges, the carbureted gas cools, and passing through an elbow pipe to a serpentine pipe in the interior of the cistern, it gets rid of the condensed water and fatty matter which passes with the gas into the last named pipe and accumulates in a recipient below the same by means of a pipe. The gas then ascends another pipe to a cylindrical refiner containing pieces of coke, sawdust, wood, and an alkali of some sort; this refiner is divided with a partition which forces the gas to pass twice through the height of the material it contains before escaping by a pipe at the top, from whence it passes to another and final refiner, the interior of which is furnished with floors or stages pierced with holes, and between which flows moss, cotton, or any other light or spongy substance slightly steeped in benzoin, petroleum, or schist is placed; from thence the gas passes through a pipe into a gasometer to be finally distributed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 15.—N° 1949.

WORCESTER, Frederick.—(*A communication from John Bayliss.*)—" Improvements in tuyeres for " furnaces and forges."

One part of this invention consists in combining an air chamber with the tuyere for the purpose of heating the air blast before it passes to the tuyere.

Another part consists in combining a water reservoir with the air chamber described for the purpose of keeping the tuyere in the said chamber cool. A box or drum is placed in the water reservoir through which the air on its way to the tuyere passes, whereby the said air is partly heated and the water in the reservoir kept cool.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, June 15.—N° 1950.

BENSON, John Solomons, and VON DER POPPENBURG, Johann.—(*Provisional protection only.*) —" Improvements in breech-loading fire-arms."

This invention refers to breech loading fire arms having hinged side blocks, and one part consists in extracting the cases of the exploded cartridges from the barrel by making the breech block and its joint pin work together, and making a stud on the joint pin work in a cross slot and helical slot in a tubular piece carrying the hook or extractor, so that when the block is raised after discharge the said tubular piece is made to slide on the joint pin and cause its hook or extractor to push or extract the case of the exploded cartridge from the barrel.

Another part consists in holding or fixing the breech block in its open or closed positions respectively by means of a stud passing through the rear eye or snug of the breech chamber engaging in one or other of two holes or depressions made in the rear end of the joint pin or axis of the breech block.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 15.—N° 1951.

KENDRICK, Thomas. — (*Provisional protection only.*) — " An improved ornamentation of fenders and " other useful and ornamental articles ordinarily used in connection therewith."

This invention consists in the application of ornamental brass tube to the bar, the top bead and bottom moulding of a fender, to the handles and shanks of fire irons, and to the arch or front plate of stoves, fire places or grates.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 15.—N° 1952.

JOHNSON, John Henry. — (*A communication from Frederick Adam Kraft and Frederic Chaw.*)— (*Provisional protection only.*)—" Improvements in the construction of zincing baths."

This invention consists of a zincing bath composed of an outer casing of iron containing an inner casing or lining of copper or its equivalent.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 15.—N° 1953.

HUMFREY, Charles, and WEBSTER, William Shakespear. — " Improvements in waterproofing " paper, and in the machinery or apparatus employed therein."

Our invention has for its object the rendering paper waterproof. Hitherto this has been effected by varnishing or painting the surface of the paper or by interposing a film of waterproof material, such as india rubber or gutta percha between two sheets of paper. Now by our invention we make the paper waterproof by saturating the paper itself with a waterproof solution.

To this effect we employ a peculiar machine by which the paper to be waterproofed first passes over a guide roller and then dips into a vat filled with the waterproofing composition. It then passes under a roller fixed at the bottom of the vat and is drawn up between two blocks of wood or metal, the wiping

ich are covered with leather or such like material. One of these blocks is fixed, the other
nd pressed against the fixed one by a spring or other contrivance, the object being to wipe quite
vo surfaces of the paper, but to squeeze it as little as possible. The paper then passes over
ide roller and again between two blocks of wood or metal as before described. The waterproofing
r is then complete.

tion for waterproofing paper may be a solution of india rubber or gutta percha, or for black
ution of any pitchy suitable material, but we prefer using a solution described in the Provisional
n filed by Joseph Rogers in the office of the Commissioners of Patents on the 23rd of April 1868,
a solution made according to the Provisional Specification filed by me, the said Charles Humfrey,
day of June 1868, N° 1932.

r thus prepared is next passed through a calendar, whereby the fibre being compressed its
quality and strength are much increased and both surfaces are glased and polished.

10*d.* Drawing.]

A.D. 1868, June 15.—N° 1954.

William Cameron, SILLAR, Robert George, and WIGNER, George William.—
nents in deodorizing and purifying sewage and making manure therefrom."

g to this Provisional Specification there is added to the sewage to be purified alum, blood, clay,
r one of its compounds, manganesi or one of its compounds, burnt clay, salt, charcoal, and
limestone.

, 4*d.* No Drawings.]

A.D. 1868, June 15.—N° 1955.

, Lyman Baldwin.—"Improvements in constructing chairs and rails which form continuous
railroads."

ach rail in two halves exactly alike, one edge being a little thicker than the other, forming bevel
they fit together. The thinest edge is slightly rounded, and when laid forms the inside face and
top of the rail, the wide edge forming the top of the outside portion of the line. The rails all
gitudinal groove on the side extending the whole length of the line, when the bevel faces are put
ey are laid so as to break joints alternately, the ends all resting in the chairs which are made
provided with risers on each side of the rails, the inside ones having ribs or projections to fit into
s in the rails, and corresponding recesses in the outside risers in which keys are driven to
il firmly in its place.

, 8*d.* Drawing.]

A.D. 1868, June 16.—N° 1956.

, William, and BROOKE, Oswald.—"Improvements in healds or heddles for weaving."

provements consist in forming the eyes for the warp threads of metal so connected with loops of
ther fibrous material or catgut or wire that the flat sides of the metallic eyes will be suspended
arallel with the line of the warp threads, the suspending loops also preventing the ends of the
yes from catching upon the adjoining warp threads when working. When used in jacquard
e loops from the metallic eyes pass through holes or oblong slits in guide boards.

, 8*d.* Drawing.]

A.D. 1868, June 16.—N° 1957.

William.—"Improvements in machinery for hackling flax, hemp, and other fibrous materials."

ention is thus defined :—

provements consist, firstly, in fixing the hackle pins to hackle bars or stocks at an angle of about
or more as practical experience may suggest, the pins moving in a plane somewhat similar to that
the pins move in machines in which an endless sheet is employed. Secondly, in placing a bar
in advance of each row of hackle pins; this bar presses the fibre being operated upon and keeps
n contact with the opposite row of pins. Thirdly, in fitting a stripper bar immediately behind
rd to free the tow from the hackle pins. Fourthly, in attaching three or more guide bars to the
lower axles that carry the driving sheets, to which sheets the guard bars and hackles are fixed;
ards are to cause the hackle bars and hackles to move in a straight line, so that I am not com-
depend upon the tension or rigidity of the driving sheets.

times I combine my hackling machine with a scutching machine; that is to say, the flax will
the process of scutching on one side of the machine and be hackled on the other side.

1*s.* 2*d.* Drawings.]

A.D. 1868, June 16.—N° 1958.

WAPPENSTEIN, Rudolph, and RAY, Richard.—(*Provisional protection only.*)—" An improved system " and apparatus for registering the numbers of passengers travelling in or on omnibuses and other " conveyances."

A double meter for the outside and another for the inside is employed on each conveyance, one division of each meter being used for indicating the entrance and the other the departure of passengers, and in one or more conspicuous positions dials and fingers to be used as checks or telltales are placed. Each division of the meter is worked by a catch lever put in motion by the hand or foot of the conductor.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 16.—N° 1959.

ELDER, David.—" Improvements in dredging machines and in apparatus connected therewith."

The object of the invention is to facilitate the sinking of cylinders for the foundations of bridges or other works where ground has to be raised vertically in the interior of a cylinder. The invention consists of an endless chain of buckets driven and carried by apparatus fixed on a turntable, which is made to rotate upon a foundation plate temporally fixed on the top of the cylinder to be sunk. In operation the apparatus has to be removed when a length of cylinder has to be added, and extended to the required length when replaced. The foundation plate is formed to fit the flange at the top of the cylinder, and furnished with a toothed wheel worked by the actuating machinery. The motive power would be supplied by a steam engine and boiler fixed on the turntable.

When set to work the buckets dig out the materials at the bottom of the cylinder, deliver it outside on the top, and the cylinders, with the engine and machinery, sink together as the excavation progresses.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 16.—N° 1960.

WHITEHEAD, Thomas.—(*Provisional protection only.*)—" Improvements in machinery for combing wool, " silk, flax, hair, or other fibrous substances."

My invention consists in the application of nipper rollers or other holders to any description of combing machines known or used in the combing trade.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 16.—N° 1961.

BOOTH, Joseph, BOOTH, John, and BOOTH, Jeremiah.—" Improvements in means or apparatus " for the cutting or dressing of stone."

The improvements relate in part, to when using lever or other handles for the cutters, to means for giving rotary motion to such cutters, so that the opposite sides of the cutting edges thereof may be used alternately.

In effecting this the teeth of a pinion on the cutter or cutter box are taken into by the teeth of a pinion on another shaft supported by the lever holder, which shaft according to one arrangement passes into the hollow axis of the lever, where it carries another pinion acted upon by the teeth of a rack capable of being moved endways, so as simultaneously to operate all the cutters of a series of levers. The endway motion the rack is effected by tappets or cams operated by other tappets and wheels or pinions capable of sliding endways on yet of revolving with another shaft driven by suitable gear capable of being changed for variations in time, the motions being aided by spiral or other springs. The pinion in place of acting on the hollow axis of the levers may act on a rack over and in cross section, forming a segment with the axis of the lever holders. The tooth wheel on the cutting tool or box thereof, and the wheel working therewith, may be bevilled or otherwise. Stops prevent the tool from going too far forward in its partial rotation. Spring stops hold the tool in position after each partial rotation, yet so as to be released as desired by inclined or other projections, or a spring or catch are drawn back by tappets or otherwise.

Some of the teeth in one of the wheels for operating the tool are removed at each position of part rotation to admit of the removal of catch before commencing to rotate cutter or cutter box.

A steadying spring or other suitable means is applied as the socket or holder of the cutter to act on the stem of the cutter or cutter box to prevent its vibration.

The endway motion to the shaft or rack giving alternate motion to the tool may be effected by lever cams, endless band, screw, or rack, actuated by hand or as before described, or by steam, or by other fluids applied at each stroke or any desired number of strokes. The tool may be held in the end of the holder or box by a screw cap and set screw.

The motion of the tool may also be affected by the wheel on the cutter or cutter box being driven by a ch wheel controlled by an arm on a shaft working in the axles of the lever holders. When the lever ders rise they move the catch or ratchet wheel, and in falling they cause the tools to move or partially te the desired distance. When the lever holders are raised in height the shaft in the axes of the lever ders has partial rotation given to it. Brushes from levers or arms or an axes clear the stone after h cut.

hin slabs of stone are supported during the action of the cutters by beds of sand, sawdust, gutta perchia, ia rubber, or other suitable matter in frames. When a series of tables for carrying stone to be worked caused to travel round a centre of motion they may be caused to move to the action of these cutters in ight or other lines by trucks or projection or guides from the tables passing into or operated by courses he desired forms.

he motions may be by rack or by screw or otherwise.

Ve also give to tables for carrying the stone under operation a vibratory or transverse motion by means ams or tappets acting on an intermediate bed.

To facilitate the use of internal axes or shafts to the lever arms carrying the cutters we sometimes form em by casting into parts.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, June 17.—N° 1962.

MMER, Maurice.—"An improved dial or indicating needle case."

The features of novelty in this invention are that the needle case consists of a cylindrical tube in the rior of which are a number of small tubes fixed to a shaft, the ends of which form the axes on which the es turn, as hereinafter described.

The top and bottom of the case is closed by caps, and in which the axes revolve, the upper cap has either its surface or round its circumference a number of figures corresponding with the needles contained in several tubes, the upper ends of which latter are conical and provided with small openings admitting of passage of a single needle at a time in the following manner:—

At the top of the shaft a small arrow headed indicator is fixed; this moves on the surface of the upper on which the figures are placed, and in which cap is a small opening so arranged as to correspond with e openings in the tubes so that by turning the arrow to a figure the tube containing the needles rresponding with the number is uncovered, and by slightly inclining the case a needle is allowed to ss out.

The means of indicating the numbers of the needles may be modified by having on the side of the case a aduated scale of figures equivalent to the number of tubes, and in lieu of the arrow a small metal blade ting as a spring is employed, the object being to close the opening in the cap by means of a boss, which used in a similar manner with the arrow.

In the centre of the scale is a groove for receiving a slide serving as an indicator, and giving the necessary otion to the tubes.

The interior part of the slide nips a spiral shaft passing round the tubes, and the ends of which are fixed the bottom plate bearing the tubes, and to the top of the latter, so that in moving the slide it is forced follow the direction of the shaft and the tubes turn on their axes, so that when the slide is opposite a mber the opening of the tubes bearing this number is brought opposite the opening in the cap.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 17.—N° 1963.

ILLS, John Philp, CARDELL, Edmund Harvey, and WILLS, Thomas Francis.—(*Provisional tection only.*)—"Improvements in the means and apparatus for mowing or reaping grass or grain crops."

This invention consists in the substitution of a series of revolving knives or saws for the reciprocating ife now used in such machines.

Motion is imparted to these cutters by any suitable gearing or band connected with the bearing wheels of machine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 17.—N° 1964.

TCHELL, David.—"Improvements in the manufacture of figured cloth."

The improvement in this cloth is that the figure is raised without wadding or stuffing, and that the yarn not loose, i.e., it does not float, but that of itself by the way in which it is manufactured or made it raises own figure.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 17.—N° 1965.

TURRELL, George Benedict.—" Improvements in coolers for beer and other liquids."

The invention relates to improvements upon an invention for which Letters Patent were granted to Jose Luis on the 14th April 1859 (No. 935); and consists in the application of a series of flattened tubes of an oval section, or approaching thereto, arranged in horizontal lines one above another, the greater diameter of such tubes being in a horizontal direction (or nearly so), and the shorter diameter in a vertical or nearly vertical direction.

The invention also consists in the employment of tubes, bars, or rods within the tubes above described or within other tubes acting in a similar manner so as to occupy the space in the centre of such tubes, the water being caused to flow through the space formed between the two tubes.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 17.—N° 1966.

BETTS, Walter.—(*Provisional protection only.*)—" Improvements in apparatus for weighing carriages, " waggons, carts, and other vehicles."

Two springs are fixed either separately on trestles or on a stand sufficiently long to receive a vehicle. A graduated bar as an indicator passes through the trestles or stand, and is marked with notches, and figures to register the weight of the vehicle by the deflection of the springs. A dial may also be used to register the weight. On each spring is a block or cushion, on which the axle-tree of the vehicle rests, the vehicle being thus suspended while being weighed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 17.—N° 1967.

COMFIELD, Thomas, the younger. — " Improvements in brakes for railway carriages, and in signalling " apparatus in connection therewith, which improvements are also partly applicable to other purposes."

This invention relates to,—

1. Applying brakes by means of mechanism giving two different purchases, employed consecutively.
2. Applying brakes by means of two powers of different nature and intensity, such as manual and steam or hydraulic power.
3. Mechanism for controlling and indicating steam power when applied to brakes.
4. Compensating for the variable power exerted in winch handle motion by employing mechanism giving a corresponding variation in the speed with which the resistance is overcome; also by a weight acting alternately as an assistance and a resistance.
5. Carrying brake shafts in stiffly shifting bearings; arrangements and combinations chiefly in connection therewith for applying brakes blocks to the wheels with equal pressure (steady or remittant).
6. Substituting pinions on brake shafts for short levers.
7. Applying brake blocks to geared wheels; also to the wheels of a single carriage with equal pressure by means of a chain, vertical bar distributor, or horizontal screw rod.
8. Carrying brake blocks by means of links.
9. Improved arrangements of gear operated by continuous brake chains, and for carrying such chains.
10. Improvements in and in connection with the mechanism whereby the chain is operated by power from the road wheels.
11. Frictionally coupling continuous torsion rods to brake gear.
12. Operating continuous rods by power from the road wheels, and obtaining uniform directional rotation therefrom.
13. Train intercommunication; by one system passengers are enabled to haul on a signal cord by winding it upon a fork or slotted bar, by another they actuate a signal by acting on one of two cords arranged to balance each other.

[Printed, 3*s*. 10*d*. Drawings.]

A.D. 1868, June 17.—N° 1968.

McLEOD, John.—" Improvements in apparatus for dyeing yarns."

The principal features of novelty in the improved apparatus are the arranging of a number of poles for carrying and working the yarn hanks upon sliding bars made to reciprocate horizontally, and the applying of gearing to turn the poles so as to gradually move round and change the positions of all parts of the hanks.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 17.—N° 1969.

WILLIAM.— (*Provisional protection only.*)—" Certain improvements in the construction of hinges, able to the doors of carriages, coaches, and similar vehicles."

ovelty of the invention consists in the combination of a horizontal peculiarly curved plate, with a over, at one end of which plate is the hinge pin, and so arranged that the pin and curved plate are within the box, which is attached to and contained in the doorway frame, the other end of this plate, which is attached to the door, being in the form of an upright plate slightly inclined e vertical in order to allow for the angle of the door and to keep it in a vertical position when

ted, 4*d.* No Drawings.]

A.D. 1868, June 17.—N° 1970.

ER, JOHN CRAWFORD. — (*Provisional protection only.*) — " An improved baking powder to be yed in the treatment of flour in the manufacture of bread and other farinaceous food."

eatures of novelty in this invention consist in mixing a pulverent acid with bi-carbonate of soda r carbonate, either in the ordinary form or treated with gelatinized water so as to produce a baking , which when incorporated in the proper proportions with flour and water, and heat applied will produce and lodge in the food substances only of a beneficial nature and disengage a suffi- f gas to give porosity or lightness to bread or pastry made therefrom.

ted, 4*d.* No Drawings.]

A.D. 1868, June 17.—N° 1971.

ES, WILLIAM, and RHODES, JAMES. — " Improvements in the construction of safes, strong , and other like depositories intended to contain valuable property."

nvention consists principally in the us of strong bars of iron made of such a form and placed in such r in connection with a secret hinge to the door as to render the safe very strong and difficult if not ble to break open. A further improvement consists in the use of a Lewis and wedge, or dog and rranged to act as a locking bolt for binding or connecting together the sides of the door near its ith the sides of the safe when closed as that they cannot be forced asunder either by a wedge or also in so coupling the front bar of the safe to the outside plate thereof that they cannot be forced off dge or other instrument.

ted, 10*d.* Drawing.]

A.D. 1868, June 17.—N° 1972.

, ALEXANDER MELVILLE. — (*A communication from Louis Clémandot and Emile Rousseau.*) — vements in the purification of ceramic, vitrifiable, and other matters, as also of the crucibles, ces, or vessels used for containing the same."

nvention relates to a mode of eliminating the iron contained (generally in the form of oxide) n or china clay, feldspath sand used in glass or crystal manufactures, crucible clays, natural tes of lime, sulphate of baryta, metallic oxides, and other products containing iron. For this I purify the materials by mixing hydrochlorate of ammonia therewith, either hydrated or not, and em to a red heat, when the salt will transform the iron into perchloride of iron, which disengages ilization. The presence of iron in the silica used in the manufacture of glass is the cause of its al green color, the same effect being apparent if the iron be contained in the material of which the is composed, and I reserve the right of purifying said crucibles, furnaces, or containing vessels in a anner by injecting hydrochlorate therein so as to eliminate the iron.

ted, 4*d.* No Drawings.]

A.D. 1868, June 18.—N° 1973.

SON, WILLIAM, and CROSSLEY, JOHN, the younger.—(*Provisional protection only.*)—" Improve- in rails and chairs for railways."

consists in constructing reversible rails for railways and the chairs for such rails in such manner wearing face of the rails which is downwards will not become worn or indented by the chairs. purpose the rail and chair are made of such form that the rail rests on the bottom of the chair at and on the top of the chair at the other side, one edge of the top and one edge of the bottom of the g suitably shaped for this purpose.

ted, 8*d.* Drawing.]

A.D. 1868, June 18.—N° 1974.

LUMLEY, John, and LUMLEY, Edwin.—"An improved machine for the manufacture of pills."

This invention consists of three grooved cylinders mounted in a framing, a cross knife for partly dividing the mass of ingredients of which the pills are to be made, and an adjustable grooved guide piece for entirely dividing and finishing the mass into pills. Two of the aforesaid cylinders guide the mass into the machine and partly divide it lengthwise; and the third and larger cylinder completely divides the mass and rolls it into a spherical form.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 18.—N° 1975.

RIDGWAY, Alfred.—(*Provisional protection only.*)—"Certain improvements in agricultural machines "termed hay-rakes."

The novelty of the invention consists in mounting the wooden teeth or elongated spikes of "horse-rakes" loosely on a central rod or shaft supported in a box open at the back and front, the teeth, by reason of this loose connection, readily glide or pass over the inequalities in the ground.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 18.—N° 1976.

COCHRAN, Alexander.—"Improvements in machinery for finishing woven fabrics."

This invention relates to machinery for giving what is known as the elastic finish to muslin and other woven fabrics, and comprises improvements in the parts for moving clamping bars or equivalent details further from or nearer to each other to suit different widths of fabric and for stretching the fabrics transversely.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 18.—N° 1977.

ATTWOOD, Charles.—(*Provisional protection only.*)—"Improvements in moulds for casting."

This invention relates to improvements in the construction of moulds for the reception of molten or cast steel, and consists in the admixture with the sand loam or other material now generally employed by moulders of solid carbonaceous substances or of hydrocarbons or other fusible or liquid carbonaceous matters, or oily substances, or other substances which are sufficiently rich in carbon, so that the moulds when formed of a mixture of sand loam or other moulding material with the before mentioned substances or some of them will surround the casting or ingot with a protective deoxidising covering, and thus prevent the deteriorating action of the atmospheric air upon the heated metal.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 18.—N° 1978.

REDFERN, George Frederick. — (*A communication from George William Philip.*) — (*Provisional protection only.*)—"Improvements in machinery for drawing rovings, and spinning yarns of cotton, wool, and "other fibres."

These improvements consist, firstly, in novel mechanism for stretching, condensing, drawing, and twisting the rovings of wool, cotton, and other fibres in a stationary frame either in direct connection with spindles operating on the principle of throstle spinning to spin a continuous thread or connected with spools to wind the yarn on in the usual manner.

The devices for drawing, twisting, and spinning simultaneously and continuously in a stationary frame consist, firstly, in a hollow shaft or tube carrying small drawing rollers at one end, which rollers are geared independently of the twisting tube in such a manner that they have a compound motion whereby they rotate on their own axes, while at the same time they turn end over end with the tube as herein-after explained.

The operation of these drawing rollers involves four distinct kinds or modes of motion; to wit, first, conjoint motion: the drawing rollers turn with the twisting tube end over end at right angles with their own axes for the purpose of twisting the roving.

Second. Independent motion.—The drawing rollers revolve on their own axes independently of the twisting tube, and at right angles to the line of its axis, for the purpose of drawing the roving.

Third. Relative motion.—The drawing rollers revolve slower or faster on their own axes in relation to the speed of the twisting tube to regulate the draft on the roving.

Fourth. Positive motion.—The drawing rollers are operated positively by cog gear independently of the twisting tube to prevent them from slipping while the tube runs by belt and pulley. The drawing rollers so constructed and arranged in connection with other devices that they shall admit of being exactly justed independently of each other, and in such relation to the twisting tube as to maintain a central sition in line with its axes, that is to say, so that the axial line of the twisting tube shall pass through point of contact of their peripheries; and the rollers shall also be subject to an equal spring pressure their opposite sides to bear alike on the roving and yield equally to any inequality or extraneous bstance in the roving while it passes between them. Secondly, these improvements consist in combining se drawing and twisting devices with spindles operating on the throstle spinning principle, with a tinuous thread twisted by means of flyers, rings, or cups.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 18.—N° 1979.

DE, Thomas Comings.—(*A communication from John McDermotts.*)—" Improvements in dressing flax, and in drawing, roving, and spinning flax and tow, and in apparatus to be used for these purposes."

This Provisional [*Specification**] describes dressing flax in the direction of its growth and fibre. The ot end is then cut from the top end and the two ends are separately drawn, rove, and spun each in the rection of their growth and fibre; also drawing down slivers of flax or tow on to improved spindles; also acing rovings of flax or tow in cans filled with cold water. The cans have inside them loose false bottoms pable of revolving on a spindle. The tops of the cans are covered with a lid carrying rollers over which e end of the roving is led; also a peculiar construction of clamp for holding flax whilst being cut.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 18.—N° 1980.

ENGST, Charles, and WATSON, Henry.—" An improved mode of and means for manufacturing gas for lighting and heating purposes."

Our invention relates to a method of producing gas by mixing atmospheric air with the vapor of certain eap and common oils or spirits, the air being forced through the oil or spirit, and the mixed air and gas ing passed through suitable purifying materials and then consumed in the ordinary manner. We prefer use the liquid known in commerce as "common spirit." We use two or more vessels, the first of which provided with a wheel or drum constructed with buckets or chambers. This wheel is also constructed to t as a fan and draw the air through an inlet aperture carrying it in the buckets through the oil or spirit hich is contained in the bottom of the vessel and forcing it through the outlet aperture into the second essel. The latter also contains a quantity of the oil or spirit which is vaporized and mixed with the air nd gas entering from the first vessel. The gas after being purified by passing through charcoal or other uitable material is collected in a receiver somewhat in the form of an ordinary gasholder and is then ready or use.

[Printed, 1*s.* Drawing.]

A.D. 1868, June 18.—N° 1981.

ARR, William Seggie.—" Improvements in water-closets."

A hollow cast metal hopper is made with a bulged side into which the pan swings as it is emptied. The pper is contracted at the upper part for the earthen basin to rest upon. The pan can be removed through e opening at the top of the hopper, or taken out at the side for repairs, a moveable section being provided the hopper. The pan closes against a lug on the inside of the hopper. The lever that operates the pan connected to the pull by a slotted link and bolt that allows of adjustment.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 18.—N° 1982.

EMINGTON, James.—" Improvements in machinery or apparatus for grinding or sharpening the cutters of reaping and mowing machines."

This invention consists of a peculiar arrangement and combination of mechanism wherein a circular stone used for grinding or sharpening the edges of the knives or cutter bars of reaping and mowing machines. The frame carrying such stone is made adjustable to any horizontal or vertical angle, with a view to apting the stone to the angle and bevil of the cutting edge of the particular knife operated upon. he knife is held in a clamp, which is free to pivot, in order to bring opposite angles of the blade under e stone.

[Printed, 10*d.* Drawing.]

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* The word "Specification" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the ginal Abridgment.

A.D. 1868, June 19.—N° 1983.

KAULBACH, Edward Reinhold.—" A new and improved rotary engine."

The features of novelty that distinguish this rotary engine from any that have preceded it are,—

1°. Great simplicity of construction.

2°. That no cylinder, properly so called, is used.

3°. That in lieu thereof a wheel is employed, of which the feloe is hollow and acts as the recipient for the steam or other propelling fluid.

4°. That the said fluid acts upon the circumference of the aforesaid wheel, instead of immediately round the axis or shaft, as has hitherto been the case, thus enabling the power of the engine to be very greatly increased without any extra outlay of fuel, by merely increasing the radius of the said wheel in the required ratio.

5°. That the *resistance* is formed by two fixed fulcra, that fit steam tight to the interior surface of the feloe and are made to remain stationary while the wheel itself revolves in the manner described in the Provisional Specification.

6°. That there are eight slides or valves, also fitted steam tight to the interior of the feloe; and that the said slides or valves are connected by means of two articulated parallelograms in groups of four, and in such a manner that the opposite pairs act in unison, and that no matter how great may be the velocity of the wheel it is impossible for the said valves to come into contact with the aforesaid fixed fulcra, but that they leap over them in rapid succession and are instantly propelled under the influence of the expansive fluid, dragging the wheel in their course, whence an even and continuous direct rotary motion is established.

7°. That slide-valves and all the ordinary complicated machinery of the original steam-engine are dispensed with.

8°. The impossibility for any part of the machine to get out of gear.

9°. Great power with smallness of space.

[Printed, 8*d.* Drawings.]

A.D. 1868, June 19.—N° 1984.

MACKIE, Alexander.—" Certain improvements in machinery or apparatus for 'setting' and distributing " type, and in apparatus for preparing certain materials to be employed therewith."

The cases or type receptacles are arranged in a vertical position around the periphery of a horizontal wheel, which is caused to rotate by ordinary means; the bottom type in each case bears or rests upon a small ledge or shoulder at the lower termination of the groove of such case, which partly closes the lower opening, and consequently all the type above the lower one are retained.

In these ledges transverse channels or grooves are formed, and beneath the lower surface thereof an arrangement of spring fingers or levers is supported, one of which is so actuated as to enter the grooves on the cases, move round and draw out the lowest type, and the other finger rises up to form a stop, towards and against which the type is drawn, and as the case continues its course an inclined surface on the opposite lower edge of the case passes over the spring stop finger, depresses it, and forces the type down a channel leading to the " composing stick." The selection or regulation as to which type is to be withdrawn is determined by the adaption of a bell crank lever or similar appliance, one end or portion of which is supplied with a small peg or finger mounted on a centre, but retained in a certain position by a spring, and is constantly moving in and out of contact with a surface of paper or other similar material, which has been previously perforated in accordance with the letters required to compose the words and sentences, so that when the pin at one end of the bell crank enters a perforation in the paper, causes the finger to enter the transverse groove, and to act upon the bottom type, which becomes thereby withdrawn. This lever also actuates the type stop finger simultaneously.

In adapting the apparatus for distributing type the latter is placed in a receptacle above the type cases attached to the wheel, and the series of empty cases passes as they move round beneath the receptacle which contains the mass of type to be distributed, a small withdrawing or liberating apparatus acting upon the bottom type in the larger receptacle releases it from the receptacle, and the type is passed into the upper end of its proper case on the wheel which is beneath, the selection of the letters for the particular cases being decided or governed by the same perforated paper as was employed to " set " or " compose " the same matter. The apparatus for perforating the paper in quantities or multiplied numbers consists of a series of perforators or punches acted upon by a lever so as to pass through several thicknesses of paper simultaneously, the position of the perforations (representing letters) being decided by the presence or absence of small plates, wires, or keys, which by throwing the punches in or out of gear cause either such separate punch to

certain ones as required according to the position of the said plates, which are drawn out or
n order to make or avoid contact with the lever pressure.
1s. 4d. Drawings.]

A.D. 1868, June 19.—Nº 1985.

OHN.—“ Improvements in packing bottles and similar articles.”
ention consists in packing bottles and similar articles in any suitable case or holder, whether
r transport or simply for storage, by passing alternately over and under the several bottles or similar
l on their side in a horizontal row a strip of packing paper, felt, cloth, sackcloth, or other suitable
aterial of one or more thicknesses. Another row of similarly packed bottles is then laid in such
hat the bottle necks will intervene between those of the first described row, and a strip of paper
uitable packing material of one or more thicknesses is passed alternately under and over the
ks of the two rows. Upon the tops of these two completed rows of bottles there are placed other
aper or layers of packing material, which are simply laid straight along, and upon the top of these
of bottles or similar articles are laid and packed in a precisely similar manner to those below,
o any convenient number of rows, the bottles in one row being made to break joint with those
row for the sake of further security and economy of space. It is further proposed sometimes to
s and similar articles in tubes disposed in a packing case or fitting round the bottles, such tubes
osed of paper, pasteboard, cloth, sackloth, or other like material.
, 6d. Drawing.]

A.D. 1868, June 19.—Nº 1986.

AVID, and GREIG, JOHN.—“ Improvements in lithographic printing machines, and in printing
s generally.”
ure of novelty which constitutes this invention is the employment of an improved parallel gripper
the cylinders of lithographic machines for holding the sheets of paper while receiving the
as the paper revolves with the cylinder.
, 8d. Drawing.]

A.D. 1868, June 19.—Nº 1987.

I, WILLIAM EDWARD.—(*A communication from C. Williams.*)—(*Provisional protection only.*)—
ments in apparatus for aerial navigation.”
ated vessel for holding the gas is made in the form of an elongated dish cover with pointed ends
; horizontal bottom, which is formed of a strong wooden framing. The car is attached to this
wooden stays, and is guided by a rudder extending from one end. The propeller is constructed
es and rotates like a paddle wheel, the vanes being made to feather or present their edges to the
part of their rotation.
, 4d. No Drawings.]

A.D. 1868, June 19.—Nº 1988.

N, MATTHEW PIERS WATT.—“ Improvements in apparatus for obtaining motive power by the
tion of inflammable aeriform fluids.”
f constructing engines worked by air or fluid compressed by the expansion of ignited aëriform
and by steam generated by the residuary heat resulting from the combustion of such mixtures.
of constructing engines in which the expansion of ignited aeriform mixtures acts directly on the
d steam generated by the residuary heat of combustion acts also on the piston.
ction of engines for ærial propulsion with differential pistons acted on by the expansion of ignited
atters.
s of igniting inflammable aeriform mixtures employed in obtaining motive power.
l, 1s. 2d. Drawing.]

A.D. 1868, June 19.—Nº 1989.

, FREDERICK BERNARD, and TWIGG, ROBERT HARKNESS. — “ Improvements in machinery
ng or working in rock, stone, or earth.”
vention comprises, firstly, a boring engine in which there is no valve to the cylinder. The piston
our pistons, forming between them three chambers; a constant supply of motive fluid is main-
the central chamber. When the pistons are at the back of their stroke a passage communicates
he central chamber and the back of the cylinder, so that the pistons are caused to make their
roke; when the forward stroke is completed the central chamber communicates by a passage with

the front end of the cylinder, so that the pistons are caused to make their back stroke. In the forward stroke exhaust takes place through the last named passage into the front chamber of the pistons, and thence through a passage in the piston rod; in the back stroke exhaust takes place through the first named passage into the back chamber of the pistons and thence through the piston rod. The openings of the passages leading from the central chamber are of more than ordinary length to allow time for the motive fluid to act and to exhaust, and these passages are wire drawn or throttled to prevent a too early action of the fluid during the stroke.

The invention comprises, secondly, apparatus and appliances to be used in connection with boring engines when they have to descend into a hole. The engine is enclosed in a cylindrical casing of about equal diameter to the hole, and the rod carrying the piston and tool works through a stuffing box; there are pipes to supply motive fluid to the engine to raise any water which may settle in the casing, and to raise water and debris from the hole. Above the engine is a threaded shaft working through a nut which is turned by gearing to feed or move the engine, the attendant being advised when another feed is required by a whistle being sounded when the tool has cut to a sufficient depth to open a special port in the cylinder. To avoid the necessity of using a long threaded shaft, cylinders or pipes are interposed between the engine or its casing and the shaft, another such cylinder being added from time to time and bolted. To adjust the apparatus to and secure it at the desired angle the ring or boss of the nut is pivoted to a ring which is again pivoted to another ring secured to a stand. The pivots are conical and clamped by nuts; or any other convenient universal joint may be used. Instead of the threaded shaft a shaft with longitudinal grooves may be used; friction rollers take into the grooves; and by rotating the rollers the shaft is raised or lowered. The rollers are adjustable to regulate the angle of the shaft, and the two of each pair can also be brought nearer together to get the required grip on the shaft.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 19.—N° 1990.

THIERRY, ALFRED JEAN BAPTISTE PIERRE.—"Improvements in marine velocipedes or vessels."

This Provisional Specification describes apparatus of aquatic locomotion called a velocipede which may be navigated in the worst weather and in the roughest seas.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, June 19.—N° 1991.

HEPPELL, THOMAS.—"Improvements in miners' safety lamps."

This invention relates to an improved arrangement of miners' safety lamps by which the risk of explosion is diminished, the light from the flame of the lamp being transmitted through suitably arranged glass surfaces, and thus furnishing a less obscure light than is obtained from lamps where the light is transmitted through wire gauze.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 20.—N° 1992.

OWEN, GEORGE.—(*Provisional protection only.*)—"Improvements in chess boards and chess men."

Magnets are inserted either in the squares of the boards, and a disc of iron on the bases of the men, or the magnets may be in the men and the iron on the square of the boards.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 20.—N° 1993.

UMPHERSTON, WILLIAM.—"Improvements in steam engines for obtaining an almost uniform speed by "means of connections between the governor and an auxiliary cut off valve."

The object is attained by means of an arrangement of levers and rods connected with the governor of the steam engine and with an auxiliary cut off valve placed near the main or slide valve through which the steam passes on entering the cylinder, and which levers and rods are set in motion and their working regulated as after mentioned. The auxiliary cut off valve receives its motion from a connecting rod or rods or levers, which I call the valve connections, and it may be attached direct to one end of this connection, or other levers may be introduced between the valve connections and the valve to change the direction of motion. The other end of the valve connections, if consisting of a rod or of rods, rests upon a support near the governor of the engine in such a way as to admit of its sliding backwards and forwards. To this end of the valve connections there is attached by a joint or hinge a lever, which I call the double motion lever, having near the end other than that by which it is attached to the valve connections a catch (which I call the first catch) for the purpose of meeting the point of the opener after described. It is necessary that the ouble motion lever be so attached and placed with reference to the valve connections that the double otion lever may be moved upwards and downwards by the action of the governor balls as after mentioned, nd may also be worked or operated upon by the opener, and by the stopper as after mentioned.

A backward and forward motion has to be given to the valve connections. The motion in the one irection opens the auxiliary cut off valve, and this I call the opening motion. The motion in the other irection shuts it, and this I call the closing motion. The opening motion must be communicated by the ontact with the first catch on the double motion lever of another lever with an oscillating motion, or of a ar with a reciprocating motion. This lever or bar I call the opener. This opening motion can be given by ny arrangement which observes the three following conditions, viz^{t}., first, that the effect of the motion shall e to open the auxiliary cut off valve; second, that if the first catch on the double motion lever were onstantly in contact with the opener one opening motion would be given and time allowed for one closing otion during each one-half revolution of the crank of the steam engine; and third, that when by the entrifugal action of the balls of the governor the double motion lever is raised or depressed, as the case may e, the opener shall miss the first catch on the double motion lever.

The closing motion, which is a reverse or return one to the opening motion, can be given to the valve connections in several ways, as by a spring or weight; but the effect of this motion must be to shut or close the auxiliary cut off valve. I prefer using a spring for this purpose.

The backward and forward motion of the valve connections above described opens and shuts the auxiliary cut off valve for each half revolution of the crank shaft; and as that valve can be adjusted to cut off the team at a much earlier point than the main or slide valve, it follows that when the valve is in motion it dmits only a certain quantity of steam at full pressure to drive each half stroke of the piston, and by so egulating the quantity admitted it is used expansively and a saving of steam is effected.

To accomplish my object it is necessary further that when the steam engine is going too fast the auxiliary ut off valve should remain closed so as to diminish the supply of steam; and that when the steam engine s going too slow the auxiliary cut off valve should remain open so as to admit an increased supply of steam, n both cases until the proper speed of the steam engine is resumed; and I now proceed to describe how hese are done. I describe, first, how I secure that the auxiliary cut off valve shall remain closed when the steam engine is going too fast until it resumes its proper speed. I connect the end of the double motion lever other than that attached to the valve connections with the governor slide by a connecting rod or connecting rods either attached directly to the governor slide or with a lever or levers interposed between the rod or rods and the slide, so that when the engine is going too fast the centrifugal action of the governor balls raises the governor slide and communicates a corresponding motion to the double motion lever, raising or depressing it so far that the opener misses the first catch on it; and the opening motion thus not being given the anxiliary cut off valve is kept shut by the spring or other force by which the closing motion is given. The steam being thus cut off, the steam engine immediately reduces its speed, and as it does so the balls of the governor fall and depress the slide. This communicates a corresponding motion to the double motion lever in the direction opposite to that caused by the raising of the balls and slide, so as to bring the first catch again in contact with the point of the opener, when the opening motion is instantly resumed.

I now proceed to describe how I secure that the auxiliary cut off valve shall remain open when the steam ngine is going too slow, until it resumes its proper speed. There is fixed near the double motion lever an rm which I call the stopper, fixed at one end upon a joint or hinge and with the other end in close proximity o a second catch on the same side of the double motion lever as the first catch. This arm is so fixed, if laced over the double motion lever, that while it can be raised it cannot fall below a certain point. If laced under that lever means must be used for raising the stopper to its place again whenever it has been ressed downwards by the double motion lever and passed by the second catch on it, so as to cause it to eet that catch. This can be done by attaching a spring or a weight to the stopper arranged to act in the esired way. Whatever means are used for this purpose must however be so adjusted as not to raise the topper above the point necessary for the proper working of the apparatus. This second catch is so placed at when by the action of the opener the double motion lever is at the extreme point to which it is moved r the purpose of opening the auxiliary cut off valve, this second catch has very slightly passed the end of e stopper. When the steam engine is going too slow the balls of the governor fall and depress the slide ith which they are connected and give a corresponding motion to the double motion lever, which brings it to contact with the stopper and raises or depresses it, as the case may be, as the lever passes until the cond catch has passed the end of the stopper, when the stopper falls or is raised and the second catch is ught by the stopper's edge or point and held there so long as the double motion lever is raised or depressed such a degree as that the second catch is met by the edge or point of the stopper, this taking place when e auxiliary cut off valve is fully open, and this valve is thereby held open so long as the second catch is so met. The steam in this way not being cut off by this valve rushes in in greater quantity, and its admission to the cylinder is regulated only by the main or slide valve, which cuts off the steam at a later part of the stroke than the auxiliary cut off valve does when working. The increased volume of steam thus admitted almost instantaneously restores the speed of the steam engine; and as the speed is thus restored the balls of the governor are again raised, and consequently the double motion lever is depressed or raised, as the case may be, so as that the second catch clears the stopper's edge or point when the closing motion is again resumed.

In conclusion, the essential matters in the arrangements and apparatus before described are the opening and closing motions, and that these must be given in each half revolution of the crank, except when the auxiliary cut off valve has to be kept open or closed, and must be derived from sources independent of each other and not connected with the action of the governor balls, the double motion lever with its two catches, its connection with the governor, the stopper, and the arrangement of the double motion lever, stopper, and opener in such a way that when the governor is in its middle position the first catch on the double motion lever will be met by the opener, and the second catch on that lever will miss coming into contact with the edge or point of the stopper; and that when the governor is raised above its middle position the opener will miss the first catch on the double motion lever; and that when the governor is depressed below its middle position the edge or point of the stopper will meet the second catch on the double motion lever when that lever is at the position which fully opens the auxiliary cut off valve.

I claim as my invention the said arrangement of the double motion lever in connection with the auxiliary cut off valve and governor slide, and of the opener, and of the spring weight or other means used for giving the closing motion, and of the stopper, so as to produce the effects above described, and the regulating by means of these the speed of steam engines so as to secure an almost uniform rate of speed notwithstanding variations of burden or of steam pressure.

[Printed, 10*d*. Drawings.]

A.D. 1868, June 20.—Nº 1994.

MIDWOOD, George Harrison.—" Improvements in the treatment of certain waste yarns or threads, " and in the subsequent application thereof for the manufacture of woven fabrics."

The novelty of the invention consists, first, in converting the colored cleaning waste into yarn suitable for weaving by submitting it to a treatment or process of opening or " breaking up " by well known machinery, and afterwards carding and spinning it into yarn and forming it into "cops" or spools for the shuttle of the loom.

Secondly, in the application and use of such "colored cleaning waste" when re-made into yarn to the manufacture of woven fabrics in which I employ it, principally in the form of weft, and use a stronger warp to give strength to the fabric after it is woven.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 20.—Nº 1995.

RICHARDSON, George.—" Certain improvements in looms for weaving."

This invention consists in the application and use of a roller or rollers over which a series of horizontal rods are passed continuously by means of an endless chain of which they form part, and the said rods being supplied with adjustable bowls secured in the position desired by washers, the whole being actuated by a star wheel and revolving stud imparting a regular intermittent motion to the chain so as to bring each bar of the series with its adjustable bowls successively and intermittently in front of a series of vertical suspended bars. These bars have dents or recesses on each side of their edges, above and below, and opposite to the continuous bars in front of them.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 20.—Nº 1996.

COMMON, Andrew Ainslie.—(*Provisional protection only.*)—" Improvements in the manufacture of " stench traps for sinks and drains."

This invention consists in casting the body outlet and dip of the stench trap in one piece, and in joining the bowl to the body in the casting of this latter.

The trap, forming as it were but one piece, there are no joints by which effluvia may escape; it cannot possibly be untrapped; it is very economically made, and is very strong.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 20.—N° 1997.

HART, Herbert William.—(*Provisional protection only.*)—" Improvements in pots, vessels, and urns " for containing tea, coffee, cocoa, chocolate, and such like hot beverages."

This invention consists in providing tea pots, coffee pots, and jugs, vessels, or urns for containing cocoa, chocolate, and such like beverages with a double casing, the space between the inner and outer casing being filled with a good non-conductor of heat; the cover is also provided with a double casing, and the spout is covered with a casing of the same construction, and is closed by a hollow plug.

The lid has a bevilled seat, and has a spring catch to hold it down.

It is also proposed to make lids to slide back in grooves instead of opening on hinges.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 20.—N° 1998.

HADLEY, Jonah.—" Improved apparatus for cleaning and decorticating wheat."

This invention relates to the cleaning and decorticating of wheat by subjecting it to friction between fixed and rotating surfaces, or surfaces rotating in opposite directions with or without the aid of of brushes.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, June 20.—N° 1999.

WRIGHT, William Leckie Graham.—(*Provisional protection only.*)—" Improvements in the propelling " of ships or vessels, and in the machinery or apparatus employed therefor."

This invention consists essentially in propelling ships or vessels by a new or improved hydraulic propeller, which is a combination of the screw propeller and a reaction hydraulic wheel or motor for actuating the same driven by the pressure and quantity of water forced through the said screw and wheel for the purpose by any of the usual means and apparatus heretofore in use for forcing water through pipes or conduits; and which compound propeller thus actuated propels the ship or vessel to which it is fitted, by preference as usual in the stern keel, by the combined action of the screw acting direct on the water to be displaced as usual, and the reactionary force of the actuating or escaping water at the extremity of the blades of the screw and reaction wheel acting on the principle of hydraulic jet propellers. Under one modification the propeller screw shaft is tubular, mounted by preference in a well in the stern keel frame, having two or more screw blades fixed near the centre of the shaft with a close division across the tubular part near the axial line of the blades, which have each two conduits running out each side of a central division opening outward to the sea water in a curved orifice or nozzle at the extremity of the blade in opposite directions, so as to act nearly tangentially to and on the reacting surface of the hollow blade during its revolution, and by preference at right angles or nearly so to the axial line of the screw shaft. Thus all so that the water when forced in at the forward end of the hollow shaft passes up the conduits on that side of all the blade which turns the screw in the direction to propel the ship forward, and when forced in at the "after" end of the shaft would pass up the conduits on the other side of the blades, so as to propel the vessel backward, while the forced and actuating water by its reaction on the radially curved hollow blades on its way to the escaping nozzels would, besides driving the screw, if allowed to escape with considerable force, be made to re-act either at an angle so as to propel the vessel in the same direction as the screw was acting, or if acting at any angle near a right angle to the axis of the shaft, which would not propel the ship in the same direction as the screw by acting on the outer water, then the current so escaping could be made to act on a fixed angular or conical reacting ring surface round the propeller, so that the force of the said unutilized diverging centrifugal current would be forced against this conical ring surface and be developed into a reactionary force in the direction of the ship's motion over the said surface so as to propel the ship along with the screw. The instantaneous reversing or stoppage of the propeller is effected by a regulating hand lever arrangement on deck by the steersman or other person which actuates a valve in the chest or conduit leading from or connecting the main current pipe with the two branches or conduits leading to the two ends of the screw or propeller shaft so as to allow the water to pass through either end of the shaft wholly or in any ratio to suit that of the forward or backward motion of the propeller desired at the time, or to shut off the current from both, to stop the motion and action of the forcing apparatus.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 20.—N° 2000.

MURRAY, Charles Henry.—" An improved device for uniting and securing the ends of straps and " belts."

My invention relates to a novel method of fastening together the ends of machine driving straps or belts, and is applicable to straps or belts of any desired size or strength, whether the same are made of leather, india-rubber, or any other material ordinarily employed for the purpose.

The said invention consists chiefly in the combination of a slotted piece or frame with a wedge, the two ends of the strap being inserted into the aperture in the said piece, and the wedge being placed between the said two ends in such a manner that the greater the strain tending to separate them the more firmly the wedge will bind and secure them.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 20.—N° 2001.

BONNALL, JOHN.—" Improvements in thrashing machines and in other machinery to be used therewith."

The invention consists, firstly, in constructing the brasses or bearings of thrashing and other machines with cylindrical pins or axes, which are capable of turning in suitable recesses formed for them in pieces which are on their outer surface, of the form of a portion of a cylinder, and are capable of turning in corresponding recesses formed for them in the plummer block and cap around the top pin or axis, and between the upper surface of the top brass and the portion of a cylinder in which it turns are placed a number of discs of thin sheet metal, so that as the lower brass wears one or more discs may be removed from the top of the upper brass and placed underneath the lower brass, and so afford a ready means of adjustment. A similar arrangement is applied between the two brasses in such manner that as the eye of the bearing wears larger one or more plates may be removed and the brasses screwed up and adjusted to the required amount. This mode of adjustment is also applicable to other descriptions of bearings and to straps for eccentrics.

The invention also consists in forming the connecting rods and the hangers or vibrating links with eyes, and in connecting them to the shoes and straw shakers by means of pins or rods passing through such eyes; but in order to obviate the necessity of oiling such parts a tube or cylinder of vulcanized india rubber or other suitable material is placed between such pins or rods and the eyes of the connecting rods and hangers or vibrating links. Or instead of employing pins or rods and tubes for this purpose, flat surfaces may be employed and strips of india rubber or other suitable material between the ends of the connecting rods and hangers or vibrating bars and the parts of the shoes and straw shakers to which they are connected.

The invention also consists in the application of sack elevators to the before mentioned machines. For this purpose a drum or pulley is mounted upon a suitable part of the machine, and motion is given thereto by suitable gearing driven from any convenient part of the machine; or if desired such gearing may be driven by a winch handle or by other suitable means. A chain, cord, or band passing around the drum or pulley is connected to the neck of the sack, and motion is given to such drum or pulley to wind the chain, cord, or band thereon, and thereby elevate the sack into a suitable position to be taken away by the attendant.

The invention also consists in forming straw elevators in two or more parts capable of sliding upon each other as heretofore, and in attaching to each of the sliding parts a rack or racks, to which motion is given by toothed wheels driven by suitable gearing set in motion by a chain, cord, or band and spocket wheel. And motion is given to such elevators to raise them to a convenient angle by means of suitable differential gearing, or by differential pulleys set in motion by a chain passing around a spocket wheel, or by other suitable means. And in some cases motion is given to the elevators to raise the straw by means of a small steam engine mounted thereon, or the elevator may be driven by means of ordinary "horse gear" applied thereto.

The invention also consists in applying to open topped straw elevators a number of transverse bows or fenders on the shoot or trough, and on or through these bows or fenders longitudinal bars or rods are fixed, thereby preventing the straw or other produce being blown out.

The invention also relates to improvements in chain, corn, or seed drills; and consists, firstly, in the employment of springs to carry one set of the pulleys around which the chains which supply the corn or seed to the guide boxes pass, such pulleys being thrown out of action when desired by means of levers, cams, or eccentrics acting upon each of the springs separately. This part of the invention also consists in the employment of a chain transversely of the machine for feeding the seed to the guide boxes, and in order to put one or more of the guide boxes out of action when desired a series of slides are employed to shut off the communication between the seed box and chain.

In some cases screws are employed for feeding the seed or corn to the guide boxes, such screws being formed of a coiled steel thread fixed at one end on its shaft, and acted upon at its other end by a screw or otherwise, so as to render it capable of adjustment as required.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, June 20.—N° 2002.

MERDINE, Jonathan, WALKER, William, and HOLT, Edward.—" Improvements in valve
for steam and other motive engines."

invention relates to arrangements of valve gear for effecting the stoppage of the movements of a
nentary valve at varying points of its travel, so as to alter or regulate the cut off or the supply of steam
primary valve; such supplementary valve being carried along by friction upon the primary valve,
when it is stopped as above explained; and the invention consists in the use of a lever which is
d by the supplementary valve, the oscillations of which lever are limited by a stop or stops variable
ion by hand or by a suitable governor; or it consist in a lever or arm variable in length or position,
novements are limited by a fixed stop or by fixed stops.

ited, 10*d*. Drawing.]

A.D. 1868, June 20.—N° 2003.

ISS, William.—(*Provisional protection only.*)—" Certain improvements in the manufacture of
ight iron hurdles, gates, and fencing."

novelty of this invention consists in simply cutting off the round or oval rails or intermediate
rds of iron hurdles, gates, or fencing to given lengths, and forming tenons and shoulders on the end
of them by removing the iron on two sides by suitable tools without heating, and forming correspond-
es or cavities in suitable parts of iron hurdles, gates, or fencing to receive the same, the connection
ections being made permanent by rivetting in the usual way.

ited, 4*d*. No Drawings.]

A.D. 1868, June 20.—N° 2004.

N, Samuel, GLOVER, Charles, DAVIS, Richard Harris, STANFORD, Thomas, SCOTT,
s, BELL, Alexander Mien, SHELDON, Edwin, FARMER, William, MASKALL, Luke,
URN, Elijah, and COLE, John Cyrus.—" Improvements in machinery for cutting or worming
rs."

part of this invention consists in arranging a pair of screwing dies so that they are opened at the
times by self acting mechanism.

her part consists in the use of a quick threaded screw or inclined plane for advancing the blank
and engaging it in the screwing dies.

her part consists in fixing in a diagonal position the rods which support the saddle carrying the
g dies.

her part consists in fixing the screwing machine on a hollow pillar or column arranged to support an
n, the hollow pillar or column having boxes to contain tools or other things.

her part consists in the combination of the screwing dies, starting screw, or plane, and diagonal rods
r and in combination with the hollow pillar or column.

ited, 1*s*. Drawing.]

A.D. 1868, June 22.—N° 2005.

AINS, Victor.—(*Provisional protection only.*)—" Improvements in the construction, propulsion,
uidance of boats or other vessels."

improvements consist, 1ly, for the construction in the contrivance of a longitudinal channel or
under the boat or vessel by means of two flanches or cheeks descending one on each side of the
nd so confining the water as to give it a greater power of resisance in supporting the vessel, which
ain velocity will glide with very little friction on the top of this liquid rail.

or the propulsion in placing the paddle wheel, screw, or other propelling power directly in front
line with the above channel, so that all the agitation communicated to the water passing under the
ll contribute to its support and progress, as well as any air or gas thereby introduced.

or the guidance in the addition of a steering apparatus in front of the vessel and acting separately
intly with the usual rudder now employed.

—With regard to rowing boats the propulsion and guidance may be combined by placing in the hands
erson guiding a cross barr having at each end a cord fastened to an oar on each side and at a proper
from the boat, so that the person rowing and the one steering facing each other and acting in
the latter by the movement given to the cross barr will be able perfectly to guide the said boat.

ted, 4*d*. No Drawings.]

A.D. 1868, June 22.—N° 2006.

AUSTIN, Robert, and AUSTIN, William Kerr.—" Improvements in rotatory engines and pumps."

The improved engine comprises a cylindrical drum fixed on a tubular shaft having two or more equidistant wings or pistons fixed on it and working concentrically in a cylindrical casing. There are twice as many stops as pistons, and these are arranged to retire from contact with the drum into recesses in the casing when the pistons have to pass them. The steam or other motive fluid enters by one end of the tubular shaft, and has access to the spaces in the casing by passages in the drum opening immediately behind each piston, whilst openings in front of each piston allow the exhaust fluid to pass off by the other end of the shaft. The stops are actuated by means of rods passing out through stuffing boxes and acted on by cams on the shaft.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 22.—N° 2007.

TONGUE, William.—(*Provisional protection only.*)—" Improvements in machinery for preparing fibrous " materials for combing and spinning."

This invention relates to certain improved arrangements for working and feeding machines for preparing and straightening wool and other fibrous materials for combing and spinning described in the Specification of an invention for which Letters Patent were granted to William Tongue, dated respectively February 23rd, 1866, No. 559, and August 22nd, 1866, No. 2155, and also described in the Provisional Specification of an invention for which a Patent is now being applied for by the said William Tongue, dated February 6th, 1868, and in the Specification of Letters Patent granted to Henry Rawson, and dated January 27th, 1859, No. 249, and also to machines for preparing fibrous materials constructed as described in the Specification of Letters Patent granted to the said William Tongue, and dated March 5th, 1862, No. 596.

The arrangements of feeding apparatus being also applicable to the arrangements of machinery described in the Provisional Specification of this invention and to the ordinary screw gill preparing machines.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 22.—N° 2008.

HUGHES, Edward Thomas. — (*A communication from Chauncey Orrin Crosby.*) — " Improvements in " machines for polishing needles."

This invention relates to improvements in the process of finishing needles after they have been tempered; and consists,—

First, in the arrangement of rolls or cylinders revolving in the same direction, and arranged so as to receive the bundle of needles, the several rolls bearing upon the bundle so as to keep it in constant motion as a substitute for the old reciprocating table.

Secondly, in the construction of a machine which receiving the needles in bulk delivers them to the carrying device, which carries them over the suitable polishing instruments, which automatically operate to polish the needles during their passage through the machine.

[Printed, 2*s*. 2*d*. Drawings.]

A.D. 1868, June 22.—N° 2009.

HUGHES, Edward Thomas. — (*A communication from Oliver Fisher Winchester.*)—" Improvements in " metallic cartridges."

This invention relates to improvements in metallic cartridges, more particularly those used in repeating and magazine arms, and consists in re-enforcing the base or head of the cartridge by applying thereto an additional thickness of metal, also providing a packing between the principal shell and re-inforce to prevent accidental explosion.

[Printed, 8*d*. Drawings.]

A.D. 1868, June 22.—N° 2010.

GEDGE, William Edward.—(*A communication from Victor Décombes.*)—(*Provisional protection only.*) —" Improved means of indicating whether the doors of railway or other carriages are securely fastened or " simply closed."

This invention consists in placing inside the carriage door a fixed plate bearing the word " open," and on the spindle of the door handle a moveable plate bearing the word " closed " or " fastened." When the handle is turned so as to completely fasten the door the moveable plate covers the fixed one, indicating that the door is properly secured, when on the contrary the door is not fastened or only partially secured the fixed plate is either wholly or partially uncovered, and the indication " open " is entirely or partly displayed.

The top or knob of the handle also bears within a groove on two edges some striking colour distinguishing it from the other brass work of the carriage; these coloured parts being vertical and shewing right and left only when the door is not properly fastened.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 22.—N° 2011.

GILBEE, William Armand.—(*A communication from Charles Justin Deblon.*)—" Improvements in " machinery or apparatus for the manufacture of cards for carding."

This improved machine instead of having one cutter, one doubler, two guides for the iron wire, one piston or pusher, and one ring bender, is constructed with several cutters, doublers, guides, and pistons in sufficient number and so arranged as to allow of a row of iron wire teeth being presented by means of moveable pincers to the cutters, being cut thereby, doubled by the doublers, and directed or conducted into the holes made in the band of leather or india rubber by prickers which make all the holes on one row at one operation by the guides, and forced into the band by the pistons, which force them in thoroughly so as to allow the bender to bend down all the teeth at one stroke and at the same height.

[Printed, 2*s*. 10*d*. Drawings.]

A.D. 1868, June 22.—N° 2012.

GRAY, Matthew, and GIBSON, Lemuel.—" Improvements in coating or covering electric conductors."

The dies or the nozzles of the tubular wire conductors are made adjustable in the direction of their longitudinal axis, so that by regulating the size of the exit aperture from the gutta percha chamber the thickness of the coating of gutta percha on the wires may be accurately regulated.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 22.—N° 2013.

CLARK, Alexander Melville.—(*A communication from Jean Alfred Desbois.*)—" Improvements in " machinery or apparatus for winding thread."

The improvements are more especially applicable to apparatus for winding thread on the bobbins or spools of sewing machines.

The invention consists in the application of a thread guide or conductor for laying the thread evenly throughout the length of the bobbin. The thread guide consists of an oscillating lever mounted on a fulcrum, the position of which is regulated by the length of the bobbin. Motion is imparted to the thread guide by a cam mounted on a vertical stem receiving motion from a screw shaft turned by hand and provided with a grooved wheel and endless band for imparting motion to the bobbin on which the thread is to be wound.

The bobbin is also mounted on an adjustable stem to suit the various sizes.

The thread guide is oscillated by the gearing above mentioned so as to lay the thread evenly as desired.

[Printed, 1*s*. Drawings.]

A.D. 1868, June 22.—N° 2014.

WHITEHOUSE, Cornelius.—" Improvements in mill bills and picks for dressing millstones and for " dressing stone for other purposes."

" In ordinary mill bills the chisel or acting ends are made in one piece with the head. This invention consists in making the chisel ends separate from the head and making the head in two parts, between which the chisel ends are fixed. The top half of the head is fixed to the handle of the bill, and the other half is capable of sliding on the handle. The chisel ends being placed between the halves of the head the moveable half is closed upon the fixed half and secured in its place by a wedge or screw. By this invention great facility is afforded for restoring the chisel ends when worn to a proper working condition. Picks are made in the manner described, excepting that flat bars having points are substituted for bars having chisel ends.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 22.—N° 2015.

TAYLOR, George.—" Improvements in the construction of boots and shoes, also in means to be used in " connection with such construction."

The novelty of this invention consists in so constructing boots or shoes that when in wear the soles shall yield to the pressure of the foot, and thus in a great measure reverse the present system of construction whereby the foot has to yield more or less to the boot or shoe.

For this purpose a metal mould of the shape of the human foot from the toe to the inner side of the heel, and provided with small indents from the toe to the commencement of the " waist," is filled with liquid caoutchouc, which when solidified is removed from the mould and dried. The sole so formed is then placed as the "inner" sole upon the welt of the boot or shoe to be made ("hoofs" having previously been secured to the toe and broad part of the welt), care being taken that the "nipples" resulting from the indents referred to are outwards. The outer sole is then placed on and stitched to the welt, the threads not passing through the india rubber sole, as that is made somewhat narrower than the outer one. The boot or shoe so made readily accommodates itself to the foot (by reason of the elastic nipples) upon pressure.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 22.—N° 2016.

HAYES, James, and HAYES, Josiah.—(*Provisional protection only.*)—"Improvements in machinery for "actuating straw shakers and vibratory screens or riddles."

This invention consists in actuating straw shakers and vibratory screens or riddles by the employment of a boss or cylindrical cam fast on a spindle; and having a cam groove cut on the cylindrical surface thereof, in which groove works an antifriction roller carried on one end of a lever which thereby receives its vibrations from the said cam. The said cam groove is cut in such a manner that for every revolution of such cylindrical cam one, two, or more double vibrations will be imparted to the vibrating lever, and hence a rapid vibratory motion is obtained.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 22.—N° 2017.

JOHNSON, John Henry.—(*A communication from Louis Durand.*)—(*Letters Patent void for want of Final Specification.*)—"Improvements in the production of a red color for dyeing and printing."

This invention relates to the production of colors from aniline or from salts of aniline, and consists in causing aniline or salts of aniline or mixtures of the same to be acted upon by nitrites of soda or of potash, or of the alkalies, or of the alkaline earths, or of the metals or mixtures of the same at an elevated temperature either at the ordinary or at any desired pressure.

The coloring matter thus produced may be subjected to a process of purification similar to that now employed for the purification of colors produced from aniline, as is well understood and practised by manufacturers of the same.

The color or dye thus resulting may be dissolved in alcohol or other solvents, and may then be employed for useful purposes in the arts, either alone or in conjunction with an acid, such as arsenic acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 23.—N° 2018.

DOWNING, Cameron Macartney Harwood.—"Improvements in fire-arms, in the method of "discharging them, and in the cartridge."

A pin playing freely in a nipple of such pattern as to allow of its replacing if necessary the ordinary nipple in common use with fire-arms, and of such shape as to move backwards and forwards within certain limits, is made to receive the blow of the hammer of the lock of the piece.

The cartridge used with this pin consists of a bullet having detonating composition in a cavity in its base, and a charge of gunpowder affixed in a case in the usual way behind the bullet.

On the cartridge being pressed home into the chamber of the piece the pin is by its shape made to penetrate the cartridge to a certain distance, and at the same time to assume the position ready for receiving the blow of the hammer. When the hammer is released it strikes the pin, and thus causes it to penetrate to the detonating compound, which exploding ignites the charge of gunpowder in the cartridge.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 23.—N° 2019.

BONNEVILLE, Henri Adrien.—(*A communication from Célestin Martin.*)—(*Provisional protection only.*)—"Certain improvements in machinery for carding and spinning wool and other fibrous materials."

This invention consists in placing between the first working cylinder and the stripping cylinder a little cylinder resting on the latter in order to prevent the fibrous material being taken off in lumps.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 23.—N° 2020.

DOUGLAS, John, and DOUGLAS, Alexander.—"Improvements in reaping and mowing machines."

The feature of novelty which constitutes this invention is the placing of the cutting knives on a travelling band or chain carried on pitch wheels of convenient diameter.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 23.—Nº 2021.

JOHNSON, Charles.—" Improvements in boilers for heating and circulating water and other liquids " and generating steam."

The first part consists in making a boiler of two hollow cylindrical or conical rings and one or more connecting tubes all in communication. The tube or tubes pass across the annular space left between the hollow rings. The fuel rests on a fire grate under and rises within the inner ring, and the products of combustion pass to the escape flue through the annular space. The fuel can be fed through a door or from the top.

Second. In constructing boilers according to the first part, or any boilers, with hollow fire grates in which water in communication with the body of the boiler is made to circulate; such hollow fire grates being formed with vertical or diagonal tubes to admit air to enter amongst the fuel from the ash pit. The said hollow fire grate when fitted with separate circulating pipes can be used as a " water boiler."

[Printed, 10*d*. Drawing.]

A.D. 1868, June 23.—Nº 2022.

NEWTON, Alfred Vincent.—(*A communication from Claudius Otignon Collignon and Nicholas Collignon.*) —" An improved construction of folding chair."

The back legs are hinged to the bars forming the front legs, and they are slotted to receive pins carried by the prolonged side bars of the seat.

[Printed 8*d*. Drawing.]

A.D. 1868, June 23.—Nº 2023.

NEWTON, Alfred Vincent.—(*A communication from Peter Hayden.*)—" An improved construction of " brick machine."

This invention relates to a new and improved machine for moulding and pressing bricks, and it consists of an improved means for conveying the clay from the crushing or rolling mill to the press boxes, and also in a novel and improved construction and arrangement of parts for moulding and compressing clay and discharging the same after being compressed.

[Printed, 1*s*. Drawings.]

A.D. 1868, June 23.—Nº 2024.

BROWN, Potto, and BROWN, Bateman.—" An improved staff or instrument to be used to ascertain " the irregularities in the surfaces of millstones with a view to their correction."

This Provisional Specification describes the use of a skeleton surface or frame to ascertain the inequalities in the surfaces of millstones.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 23.—Nº 2025.

BURGESS, Charles Thomas.—" Improvements in reaping and mowing machines."

This Provisional Specification describes, firstly, forming the connecting rod, which gives motion to the knife, hollow to contain a supply of oil to lubricate the crank pin; secondly, lubricating the axis of reaping and mowing machines with a closed oil vessel screwed into the bearing, the oil vessel being of of glass surrounded by a metal casing; thirdly, a mode of setting the cutter of reaping and mowing machines to cut at different heights from the ground.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 23.—Nº 2026.

SOWERBY, William.—" Improvements in rails and in the erection thereof on common roads or tracks " for the passage of common carts, waggons, carriages, and other vehicles having wheels without flanges."

This Complete Specification describes a rail with three radiating webs; one of these webs fits into a chair and is bolted to it, and the other two webs form a hollow, in which the carriage wheels run. In sandy or soft ground short screw piles are used, upon which the rails are fixed, otherwise they are carried in chairs.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 24.—Nº 2027.

GIACOMETTI, Dominique Marie.—(*Partly a communication from François Montecucco.*)—(*Provisional Protection only.*)—" Improvements in apparatus for economizing motive power."

This invention is based upon a new application of a lever and weights, and an axis turning on a pivot. The axis receives a movement of complete rotation by means of a lever, to the ends of which any motive force may be applied.

[Printed, 10*d*. Drawings.]

A.D. 1868, June 24.—N° 2028.

SUTTON, Charles Thomas.—(*Provisional protection only.*)—" Improvements in apparatus to be used " for educational purposes, to illustrate the propulsive force of steam and the action of the screw propeller."

This Provisional Specification describes a boat in which is a boiler, and steam therefrom is caused to issue from an orifice and to strike discs or cups on an axis, which is thus rotated; the axis passes out of the boat through a tube and has a screw propeller upon it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2029.

MOORE, Benjamin Theophilus.—" New or improved apparatus for protecting water pipes from injury " by frost."

This invention consists, firstly, in applying to the service pipes in houses and other buildings two cocks, taps, or valves having weighted arms so connected to a glass vessel containing water that on the breaking of such vessel on the occurrence of frost the arms in falling into a vertical position turn the tap so as to effect, the one the closing of the communication between the service pipe and the main, and the other the opening of a communication between the service pipe and an escape opening or branch. Both these operations may also be effected by one single tap with weighted arm.

Another part of the invention consists in suspending over the opening of a service pipe leading from a cistern or tank a plug, so connected to a glass vessel containing water that on the breaking of such glass vessel on the occurrence of frost the plug falls into and closes the opening of the pipe. This pipe may also be provided at its lowest point with an escape branch having a tap constructed as first described so as to open on the occurrence of frost and allow the water in the service pipe to escape.

[Printed, 2*s*. Drawings.]

A.D. 1868, June 24.—N° 2030.

CARR, William.— (*Provisional protection only.*) —" Certain improvements in the construction and " manufacture of carriages, coaches, and other vehicles of a similar description."

The improvements consist, first, in the combination of a horizontal peculiarly curved plate, with a box or cover, at one end of which plate is the hinge pin, and so arranged that the pin and curved plates are enclosed within the box which is attached to and contained in the doorway frame, the other end of this curved plate which is attached to the door being in the form of an upright plate slightly inclined from the vertical in order to allow for the angle of the door and keep it in a vertical position when open.

A second part of the invention relates to such carriages as landaus, wherein it is necessary to lower the window before opening the door, and consists in the use of a double bolt, which is withdrawn from holes in the carriage frame by the pressure of the window or wooden shutter acting on a spring foot and combination of levers, which latter are so connected to the door handle and a hinge piece or ledge on which the window bears when raised that when the handle is turned to open the door the window is pushed off the ledge by the lifting of the hinge plate, and the window falls into the pocket, and the bolts being thereby simultaneously withdrawn the door may be opened.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2031.

GREGORY, James. — (*Provisional protection only.*) — " Improvements in apparatus for charring and " preparing animal charcoal so as to render it fit for use in the process of purifying saccharine and other " matters."

An improved retort suitable for preparing animal charcoal is constructed by fitting a perforated plate or perforated plates inside a revolving cylinder or other suitably shaped vessel. The perforations are of an oblong shape and placed at an angle to the axis of the retort, so as to spread the materials intended to be charred equably over the surface of the cylinder and pass them onwards as the cylinder revolves. Two retorts are worked together, one over the other, and are connected by a pipe; and exhaust apparatus is connected with the retorts for drawing off gases and light dust.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2032.

VOOD, Nathaniel Clayton. — (*Provisional protection only.*)—" Improvements in carding
"
ention relates to an improved method of actuating the doffer of carding engines. To the end of
b-stock" a slotted crank or lever is secured in which a pair of steps are fitted so as to slide to and
n action, the said steps being bored conically to suit a conical excentric or crank pin which is
formed upon the revolving shaft which actuates the doffer. By shifting the "comb-stock," or
ric, or the shaft upon which it is fixed endwise, the slack in the fit both of the excentric in the
of the steps in the slotted lever is "taken up." The apparatus by preferance works in oil.
l, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2033.

R, William Henry.—(*Provisional protection only.*)—" Improvements in and in the manu-
of cartridges suitable for breech-loading fowling pieces and other fire-arms."
nproved cartridge consists of a drawn metal (by preference steel) tube, to which is secured a
l metal bottom, having a central perforation surrounded by an annular groove, thereby forming a
saddle to receive a percussion cap of the ordinary description.
tridge is charged in the ordinary way, and may be used with any central fire breech loading gun, in
hammer acts direct, or through a pin or its mechanical equivalent on to the rear of the cartridge,
say, such as that known as "Daws" or other like guns.
d, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2034.

LL, Jonathan.—" Improvements in furnaces."
provements consist in combining or constructing and arranging such furnaces of fire-brick and
brick braced and held together by straps or bars and rods or bolts of iron, and as applied to steam
being placed at the end thereof and communicating with the flue or flues.
d, 10*d*. Drawing.]

A.D. 1868, June 24.—N° 2035.

, **Samuel**, and **PATTERSON, Thomas.**—(*Letters Patent void for want of Final Specification.*)—
ements in winches and cranes or apparatus for raising or moving heavy bodies."
s, cranes, or apparatus for raising or moving heavy bodies are so constructed that the same
t which throws a friction cone into gear to cause the barrel to rotate with the main shaft also
alve or cock to admit the necessary supply of steam or motive fluid to the cylinder, and when the
rown out of gear the valve is closed so that only enough steam is admitted to keep the piston in

y out the invention a spindle is employed which is connected by a rod with the valve, and has a
act on a lever for moving the cone; the main shaft passes through the winch barrel. By turning
le in one direction the valve is opened and the cone put into gear; by turning it in the other
the valve is closed and the cone released. An arrangement is described for obtaining greater power
uired.
d, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2036.

RT, John.—(*Provisional protection refused.*)—" Improvements in ornamenting lace and other
."
form a design upon the lace or fabric to be ornamented; I then prepare an adhesive substance or
nposed of gum, starch, gelatine, shellac, or other agent, which I transfer to the lace or other fabric
ause adhesion between the lace or other fabric and those parts or ornaments intended to form the
ereon, when having prepared or arranged the various objects to be used in forming the design I use
r other agents to select from amongst the objects those best suited to carry out the design.
ying out my invention I employ (amongst other objects for ornamenting) metallic substances with
t other material.
d, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2037.

MACKIE, Matthew, and MACKIE, John.—" Improvements in apparatus applicable to steam boilers " for utilizing the waste heat and for economising fuel."

The feature of novelty which constitutes this invention is the forming of the flue division at the rear of the boiler of suitably shaped metallic chambers in place of a brick wall as hitherto. The feed water passes through a pipe suitably placed in the flue so that it is considerably heated before reaching the boiler.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 24.—N° 2038.

RESTELL, Thomas.—" Certain improvements in military and sporting guns, as also in cartridges applicable " to the same or other descriptions of breech-loading guns now in use, as well as in bayonets for military " guns."

The novelty of this invention consists in simplifying both the lock action and breech part of breech loading fire arms; as also in the means of converting not only the Enfield, but Chassepot, Snider, Richards, Wilson, Terry, and other breech loaders into my system, whereby I am enabled to adapt and use central fire and other modified forms and constructions of cartridges to suit the various weapons; as also in the use of a triangular guide rod, and the application of triangular steel entire in the formation and mode of fixing bayonets to military weapons.

As well as in tightening and regulating the bands.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, June 24.—N° 2039.

SMITH, George.—(*Provisional protection only.*)—" Improvements in ventilating boots and shoes, and in " the apparatus to be employed therein."

This invention consists of an apparatus to be inserted in the heel of boots or shoes for the purpose of ventilating the same. The apparatus is composed of a perforated plate which receives a vertical tube passing downwards into the substance of the heel, such tube being provided at its lower end with a horizontal branch tube protruding from the front of the heel, and at its upper end with a pair of branch tubes, through the mouth of which and through the upper orifice of the vertical tube the air entering the lower horizontal tube is conducted under the upper leather to ventilate the interior of the boot or shoe.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2040.

WILSON, Edward Brown.—(*Provisional protection only.*)—" Improvements in furnaces."

This invention consists in carrying off the gases from furnaces after they have effected their work into a flue or flues, which flue or flues I prefer to make in plate iron and line with fire brick. These flues may be constructed at the sides, along the top, or beneath the furnaces. I propose to connect one end of such flue with the ordinary waste gas outlet, and the other end with the generator or gas producer. Into the end of the flue or flues communicating with the gas outlet I inject a current of air by any well known plan, but I prefer to use a jet or jets of steam which carries therewith a current of air. This is forced forward into the flue, combining with the waste products of combustion, and is caused to enter the generator or fuel chamber at any convenient point, but I prefer to construct such entrance above the hearth on which the fuel rests. The slag or refuse is run off at the lowest point or taken out by suitable doors, or the air may be injected at the front of the furnace. The generator may be on any well known plan, and the heat may be regulated by the admission of air. By the employment of this invention the use of chimneys may be dispensed with.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 24.—N° 2041.

ELSDON, Robert.—(*Provisional protection only.*)—" Improvements in burning lime and cement, and in " apparatus employed therein."

This Provisional Specification describes a tubular revolving furnace for burning lime or cement, the furnace being mounted on a frame in such manner that it may be rotated about its longitudinal axis.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 25.—N° 2042.

MUCKLOW, Edward.—" Utilising refuse tanning matters for dyeing purposes."

This invention consists in applying the waste or refuse materials employed by tanners, after they have been used for tanning purposes, and in utilising them for dyeing purposes. Most of the materials used for anning possess coloring matter in addition to the tanin or astringent properties, and this coloring matter when absorbed by the gelatin, phosphate of lime, and other animal matter, I use for producing permanent dyes on cotton and other fibrous substances.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 25.—N° 2043.

BRIGGS, Joseph.—" Improvements in constructing ingot moulds."

A light ingot mould or shell surrounded by a stratum of sand, the mould and sand also further surrounded by a wrought iron casing.

[Printed, 1*s*. Drawings.]

A.D. 1868, June 25.—N° 2044.

ACK, James.—" Improvements in applying auxiliary screw propellers to sailing ships, and in the construction of sailing ships to adapt them therefor."

First. The screw propeller and its shaft are moveable fore and aft. When moved aft the screw is in a position free to be operated, and when moved forward it is housed in a recess and is out of the current of the water.

Second. A recess is formed in the dead wood or run for the screw. Said recess is open only at the aft end.

Third. A sliding block or blocks let down from the deck fill the space when the screw is housed.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 25.—N° 2045.

LEVER, Ellis.—(*Provisional protection only.*)—" Certain improvements in the preparation or coating of "woven fabrics, which are to be subsequently rendered liquid-proof or non-inflammable."

The novelty of the invention consists in the application and use of paper pulp or fibrous bulb to the surfaces of such woven fabrics, and applied thereto in a liquid or pulp like state so as to enter and fill the interstices in between the warp and weft.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 25.—N° 2046.

AULTON, Arthur Daniel.—(*Provisional protection only.*)—" A new or improved mode or manner of "giving motion to sewing machines and other like pieces of mechanism."

The motive power I employ consists substantially of a coiled spring, which is wound round an axis by the means hereinafter explained. One end of the said coiled spring is secured to the said axis, the other or free end being secured to a box or drum, which revolves loosely upon the said axis, and carries with it a wheel or series of wheels, by means of which motion is communicated to the machine. The spring is wound up by means of a ratchet lever of peculiar construction, and which has a double action for the purpose of increasing its power. The working of the said lever is also so arranged that it may wind up the spring at one end whilst it is uncoiling itself at the other. In this manner the machine does not stop whilst being wound up. The speed may be easily regulated or the machine stopped by means of a screw caused to press upon the needle bar; or any other mechanical equivalent may be employed for this purpose.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 25.—N° 2047.

GARRARD, John Goodjer.—" Improvements in rick cloths."

The rick cloth is intended to provide an immediate protection for ricks as a substitute for thatching.

The cloth, whether of canvas or felt, is made so as to be left open in one part, in order that it may be folded in to fit over the tops of ricks of different sizes.

The cloth may be made so as to form a temporary covering, or it may be dressed so as to adapt it for a permanent cover for ricks.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 25.—N° 2048.

HIGHTON, Henry.—" Improvements in the manufacture of artificial stone or slate, and in coloring the same."

According to this Provisional Specification a slab or block is cast in hydraulic cement, and is then soaked in a solution of soluble silicate; precipitated silica is sometimes added. Precipitated silica for this and other purposes is made by passing carbonic acid gas through a solution of soluble silicate. The carbonated alkali is again rendered caustic and is used to dissolve a fresh quantity of silica. Also artificial stone or slate is made with soluble silicate obtained by dissolving a natural readily soluble silica in alkali. Also in treating artificial stone or slate made as first herein described with a solution of a soluble salt or with an acid, such as oxalic. Also the coloring such artificial stone or slate by precipitating coloring matter in its pores.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 25.—N° 2049.

BOUSFIELD, George Tomlinson. — (*A communication from Ambjorn Pierre le Comte Sparre.*)— "Improvements in fire-arms and cartridges."

This Provisional Specification describes a cartridge case formed of a tube of paper; the bottom of this tube is formed of a star shaped piece of fabric, the rays of which are pasted to the tube. A disc of felt saturated with oil or varnish is then thrust down to the bottom of the tube, and another star of fabric is pasted within the tube, but this may be omitted; a hole is formed in the centre to allow the striker to pass. Methods for holding the fulminate in these cartridges are described. An improved lock and extractor are also described. The Specification also describes applying an extra bottom to cartridges, so that they may be extracted by the extractor above mentioned.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 26.—N° 2050.

HINE, John.—"Improvements in apparatus for cutting or dressing millstones."

The apparatus consists of two bars connected together by links in the manner of a parallel ruler.

A screw is mounted in one of the bars, the end being received in a longitudinal groove of the other or movable bar, so as to move it towards or from the fixed bar on turning the screw. The fixed bar is provided with stops at either end dropping into the furrow of the stone, so as to hold it in position when in use.

The cutter or cutters formed of diamond or other hard stones is mounted in a metal holder resembling a plane, which is slid across the stone against the adjustable bar above mentioned, so as to form the lines or cuts. The movable bar is advanced a certain distance after making each cut by turning the screw, and the apparatus is transferred to each furrow successively.

The cutters, when two or more in number, may be adjusted in the block at suitable distances apart by set screws or otherwise.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 26.—N° 2051.

HASTINGS, Charles, BRIGGS, James, and LAW, James. — "Improvements in machinery and "apparatus for finishing yarns made of wool and other fibrous substances."

Our invention consists in removing the impurities from and in elongating and straightening worsted and other yarn by passing the yarn through a trough containing a hot solution of soap and water or a solution of other ingredients. A brush or other equivalent is employed to remove the loose impurities. The trough is provided with guide rails to give friction and with a heating apparatus. After the yarn has passed through the solution it is wound on to a bobbin while still wet.

[Printed, 8*d.* Drawing.]

A.D. 1868, June 26.—N° 2052.

ABEL, Charles Denton.—(*A communication from Adolphe Cointreau.*)—(*Provisional protection only.*)— "New or improved machinery or apparatus for cleansing or washing bottles."

This apparatus is composed of a framing constituting a reservoir for water under pressure, in the centre of which rises a hollow column terminating in a closed chamber into which the water rises. Four or more hollow vertical spindles receiving rotary motion by gearing from a driving shaft serve to carry in an inverted position the bottles to be washed. Pipes communicating by means of cocks with the vessel on the top of the column pass firstly down through such column and up through the hollow spindles into the bottles where the pipes are perforated; and, secondly, the pipes pass down outside the column to a position opposite the bottles, where they are also perforated. Brush services being attached both to the interior and the exterior perforated pipes, so as to be in contact with the interior and outer surfaces of the bottles, these will as they are made to rotate with the spindles be subjected to the joint action of the jets of water issuing from the pipes and of the brushes. The water in the reservoir may be heated by steam if required.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 26.—Nº 2053.

), **Thomas.**—" Improved apparatus or arrangements for covering and uncovering railway trucks and
gons."
sisting of a roller with suitable winding apparatus placed above the truck, to which roller is attached
ulin or other suitable cover capable of being wound off and on the roller.
nted, 1*s*. 4*d*. Drawings.]

A.D. 1868, June 26.—Nº 2054.

E, **Michael.**—" Improvements in folding chairs."
chain with diagonal cross legs and flexible or hinged seat is provided with a folding back capable of
nade serviceable as a back rest at either of two sides of the seat. The back consists of two frames
ransverse rail. The former is pin-jointed to the outer sides of the diagonal cross legs at points below
tres which connect each pair of legs. Stops affixed to the legs or cross rails to support the folding
position are furnished.
A chair with diagonal cross legs, flexible or hinged seat and downwards and forwards folding back
ed with a transverse stop piece secured on or near the top of the back legs at a point above the joints
connect the back to the legs. The back, when the chair is being used, rests against the said transverse

ited, 10*d*. Drawing.]

A.D. 1868, June 26.—Nº 2055.

ER, **Thomas.**—" Improvements in marine chain stoppers."
tes to elastic or yielding stoppers, and consists :—
. In the employment of one or more springs of a novel construction placed between the fixed and
le frames. These springs are made of india rubber or other elastic gum, and each one in form
les the frustrum of a hollow cone.
nd. In employing on the moveable frame an excentric and lever to raise and lower the " catch bit."
ited, 10*d*. Drawing.]

A.D. 1868, June 26.—Nº 2056.

GH, **Robert.**—" Improvements in looms for weaving."
novelty consists in,—
bining ordinary jack rods and levers with adjustable weighted levers for working healds or heddles.
nted, 10*d*. Drawing.]

A.D. 1868, June 26.—Nº 2057.

ICE, **Samuel Solomon.**—(*A communication from Simon Hayem, ainé.*)—" An improved fastening
eckties, scarfs, and other articles."
mproved fastening consists of a roller or otherwise shaped piece mounted and working excentrically,
when worked in one direction it exerts pressure on and retains in place the tongue slide band or
le piece of the necktie or other article to which the apparatus is applied, which tongue slide or
le piece it releases when worked in the other direction.
e arrangement this may be effected by mounting a roller or other working piece excentrically on
a flanged plate or frame sewn or attached to the cravat, such excentric piece having a finger piece
ction by working which the excentric pressure-piece is actuated in the required direction, either to
r unfasten the cravat or other article.
ited, 6*d*. Drawing.]

A.D. 1868, June 26.—Nº 2058.

OR, **James.**—(*Provisional protection only.*)—" Improvements in machinery or arrangements for
ing, cleaning, and preparing cotton and other fibrous materials."
e improvements consist in combining and arranging two opening machines of a class which feed
iver at the same side, so that when the material is operated upon by one machine it will be conveyed
anical means to the other machine. The machines are arranged end to end, one above the other, or
one room and the other under it in the room below.
ited, 4*d*. No Drawings.]

A.D. 1868, June 26.—N° 2059.

THOMSON, Andrew.—"Improvements in water-closets."

The valve at the bottom of the pan is moved sideways by turning a handle in a curved slot, the rod the handle and the arm of the valve being centred on the same spindle. During the movement of t handle a roller on the rod presses upon an incline on the top of a spindle which carries the water suppl valve; this valve is thus opened to admit water to the flush pipe. A weight returns the handle and pa valve to their normal position, and a spring closes the water supply valve.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 26.—N° 2060.

HOLMES, Frederic Hale.—"Improvements in electro-magnetic and magneto-electric machines."

My invention consists, firstly, of a new form of permanent or electro magnet which is formed of tw hollow discs, from the edges of which discs project radial arms, these arms being bent so that when the tw discs are fixed on a shaft the arms form a ring of poles alternately north and south, and are in one plan Secondly, in helices or bobbins so formed that when the two pieces forming the cores are placed together with an insulating substance between them the two plates do not touch at either side or end of the cores, but show a clear split from end to end and radial to the centre; and in making the cores of bundles of straight iron wires, the ends being fastened into iron plates, but not split as above described.

Thirdly, in a new form of commutator to suit the helices made with the secondary coils.

Fourthly, in having a current changer fixed in the course of the wires between the commutator and the coils round the electro-magnets.

[Printed, 1*s*. Drawing.]

A.D. 1868, June 26.—N° 2061.

THOMAS, Luke.—"A new or improved apparatus to be used along-shore for the distillation of pure "water from saltwater or water impregnated with earthy or other matters."

The chief features of novelty in this invention are so constructing a condenser that it can be placed (and the so placing it) right into or under the sea, or river, or lake where it may be used, thus dispensing with the outer shell or casing of the condenser; and the employment (by my peculiar arrangement) of the steam pressure to force the distilled water into a tank or reservoir ashore.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, June 26.—N° 2062.

BRANDON, Alexander Horace.—(*A communication from Henry Augustus Chapin and Charles Willia May.*)—(*Provisional protection only.*)—"Improvements in metallic cartridge shells and heads."

These improvements consist in the making a cast or struck up cartridge shell and head in one piece with pure tin or an alloy of tin and lead or other metals, or lead alone, the said cartridge case having the usual priming tube formed in it or not, and having a plate of metal surrounding the priming tube, or without the said plate.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 26.—N° 2063.

BLANCHFLOWER, Timothy Coleman.—"An improved mode of packing preserved meats and fruits "for sale."

A disc of glazed earthenware or glass, which fits the pot that is to receive the animal or vegetable preserve is dropped and allowed to rest upon the preserve, by which means the air will be effectually excluded therefrom.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 26.—N° 2064.

BRANDON, Alexander Horace.—(*A communication from William Sparks Thomson.*)—"Improvements "in machinery for spinning hemp and other textile fibres."

This invention relates, 1st, to the method of driving spinning machinery, and to the means of quickening, diminishing, or stopping the motion; 2nd, to a form of nippers for holding the sliver and preventing the twist from running back; 3rd, the flyer is made of steel; 4th, the thread is drawn with a regular and uniform speed, depending upon the rate of twisting; 5th, the yarn is laid on the bobbin by means of a moveable arm, whereby it is more uniformly distributed.

[Printed 10*d*. Drawing.]

A.D. 1868, June 27.—N° 2065.

HODGE, PAUL RAPSEY.—(*Provisional protection only.*)—" Improvements in and application of the use of " hydro-carbonacious fluids in combination with highly attenuated or superheated steam for the purposes of " smelting, melting, reheating, and working of metals, glass, porcelain, or calcarious materials."

These improvements relate to the application and use of hydrocarbons, such as gas tar, petroleum, or parafine, or any of their combinations or products arising from them in their manufacture to be used separately or in combination with highly attenuated or superheated steam, through and by means of compound jets, annular or any other shape, wherein the steam and hydrocarbons are brought together at the same time in their proper equivalents to produce proper combustion for the purposes of smelting, melting, heating, and working of metals, glass, porcelain, or calcarious matters, and applying such apparatus in such a manner as to be used separately or in combination with other fuel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 27.—N° 2066.

WARRY, ROBERT.—(*Provisional protection only.*)—" Improvements in the construction of breech-loading " fire-arms."

This invention consists in improvements in the construction of breech-loading fire-arms in which central-fire ammunition is used. The breech-block consists of two parts, the forward portion termed the "breech-piece," and the rear portion termed the "breech-block," the two parts being respectively hinged to a transverse pin, and upon the breech-block being elevated towards the barrel may be caused to traverse backwards and forwards. A loose striker is placed in the centre of the breech-piece. A crank shaped piece of metal is mounted on the transverse pin, one arm whereof fits into a recess in the breech-piece and the rear end of the barrel, and is terminated by a tooth which serves to extract the cartridge case. A stud or projection is placed on the bottom of the breech chamber, against which the head of the cartridge case strikes upon being withdrawn, the result being that the cartridge is ejected. The other arm of the crank-shaped piece of metal rises vertically from the breech, and is slotted down the centre, thus serving the purpose of a sight-guide. The rear face of the arm is inclined or curved in a forward direction. The breech block is hollow and contains a partially hollow cylindrical striking bolt, having a solid face and a vertical projection at its forward end, a notch being formed at the back thereof for the reception of the tooth of the sear when the gun is cocked. A helical spring is placed within the hollow portion of the striking bolt, which spring is compressed when the gun is cocked, and serves to restore the bolt to its normal position after discharge. The rear end of the breech-block contains a locking bolt, which takes into a recess formed in the breech-plate or tang and locks the breech-block. The forward end of the bolt is acted upon by the helical spring, and it is secured in position by a vertical pin which passes through a slot formed therein and through a portion of the breech-block. A small helical spring is placed around the last mentioned pin, the same being capable of being compressed by an eye-loop, which is placed on the upper end of the pin, and by which the upward pressure of the spring is communicated to the sear. The sear consists of a piece of metal which lies and works in a recess formed in the upper portion of the rear end of the breech-block, the forward end thereof being terminated by a tooth and being pivoted on a transverse pin, whilst the hinder end rests upon the before mentioned eye-loop, and is furnished with a projecting arm having a thumb-piece or head. Upon the breech-block being elevated and drawn backwards, the vertical projection at the end of the striking bolt is carried up the face of the sight-guide, the helical spring being thereby compressed and the bolt forced backwards until the tooth of the sear takes into the notch on the striking bolt and holds it in position for firing. Upon the breech-block being closed the gun is ready for firing, and by depressing the thumb-piece on the lateral arm of the sear the small helical spring which had retained the latter at the requisite angle is compressed and the striking bolt liberated, thereby actuating the striker and causing discharge.

A tube capable of holding a given number of cartridges may be placed under the barrel in a groove formed in the stock, in which case the bottom of the chamber is formed with a moveable trap pivoted at its rear end, and is retained in its normal position by a spring placed underneath the same. A lever-catch is placed above the trap, and upon the breech-piece being drawn back is depressed thereby, bringing the trap into an oblique position so that a cartridge will pass from the tube on to the same. Upon the pressure being removed from the lever catch, the trap returns to its horizontal position and the cartridge is carried forward into the barrel by the breech-piece.

The invention is applicable to military and sporting guns, and part thereof to revolver fire-arms.

The novelty of the invention consists in the combination and arrangement of the parts and mechanism employed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 27.—N° 2067.

BAGGS, Isham, and BRABY, Frederick.—" Improvements in the extrication and condensation of " ammonia, and in the manufacture of ammoniacal salts."

This invention consists in extricating ammonia from its various crude solutions, first, by blowing air or gas through such solutions; secondly, by exposing such solutions to a vacuum or partial vacuum. In either case, the ammonia is liberated by its elastic force; and also in the case of air and gases by its tendency to diffusion.

The ammoniacal gas, as it is liberated, is caused by suitable apparatus to enter a vessel containing saline and metallic solutions, acids, or water, where it is condensed and arrested, the various salts of ammonia being thereby formed, and the oxides, if any, generally precipitated.

The crude ammoniacal solutions are preferably heated, and the air or gas when employed is used in either a hot or a cold state.

By placing ice or water in the receiver a strong ammoniacal solution is obtained.

[Printed, 4d. No Drawings.]

A.D. 1868, June 27.—N° 2068.

MATHER, Colin.—" An improved mode of excavating or loosening and removing soil and other deposits " for forming, deepening, and cleansing harbours and docks and for other purposes."

My invention consists in the application of a jet of water under pressure for loosening and removing soil and other deposits from the beds of rivers or other places where excavations are required. The jet of water is applied direct through a nozzle to the deposit, and the force of water must be sufficient to loosen and propel the soil into the stream or tideway: or the water issuing from the nozzle forces the soil up a bent or other pipe and into a barge or other vessel, or on to the bank of the river or other water-way to be deepened or cleansed.

[Printed, 8d. Drawing.]

A.D. 1868, June 27.—N° 2069.

BOWKER, Jonathan, and IVERS, James.—(*Provisional protection only.*)—" A slip or apparatus for " raising, placing, or replacing on the line of rails or metals, engines, tenders, carriages, trucks, or other " conveyances used thereon."

The novelty of this invention consists in the application, adaptation, and construction of the slips, which are formed of two inclined planes in shape like the letter V, with flanges on each side; the two inclined planes being connected together across over the rail and furnished with a point or guard, the slips being used in pairs (one on each rail) and made right and left hand.

[Printed, 4d. No Drawings.]

A.D. 1868, June 27.—N° 2070.

TYSON, James.—(*Provisional protection only.*)—" Improvements in machinery used in the manufacture of " bobbins for thread or for similar purposes."

This invention relates to the use or employment of a tubular saw and boring bit therein, so as to form the outside of the block and bore the same at one and the same time and operation.

[Printed, 4d. No Drawings.]

A.D. 1868, June 27.—N° 2071.

McCULLOCH, Gilbert.—" Improvements in thread polishing machines."

This invention consists in improved self acting spreading motions for laying the threads side by side on the rollers instead of by hand, as at present, and in an improved self acting arrangement for giving the required tension to the threads on the rollers.

[Printed, 1s. 4d. Drawings.]

A.D. 1868, June 27.—N° 2072.

DEANE, William Francis.—(*Provisional protection only.*)—" Improvements in obtaining oxide of " manganese from a certain residual product of the manufacture of chlorine."

First process.—Carbonic acid gas is obtained from residual still liquor and lime, and then heated and conveyed into a vessel containing neutralized liquor. This gives carbonate of manganese, which is converted into the oxide thereof by known means. When the acidity of the residual liquor is weak hydro-chloric acid is added.

Second process.—Carbonic acid gas is obtained as in the first process, and used, heated if desired, in contact with carbonate of lime to produce a bicarbonate of lime. The bicarbonate is mixed or agitated with

I use a vat with a concave bottom in which is arranged a slowly revolving cylinder. This cylinder is divided into compartments for containing the articles to be dyed, which compartments may be moveable cases made of perforated metal. The said compartments are closed by sheets of perforated metal, and the apparatus is provided with doors for inserting and removing the material. I use a heating apparatus with a double bottom extending along the bottom of the vat and provided with two brass tubes having perforations for the passage of steam. The double bottom is also perforated with conical holes, so that the water being forcibly ejected through the same gives to the materials or articles as they pass a slight rotary motion.

[Printed, 6*d*. Drawing.]

A.D. 1868, June 29.—N° 2079.

HANNAH, Samuel.—" Certain improvements in fluid meters."

My invention consists in making the pistons of fluid meters travel in a circular direction instead of rectilinear as heretofore. The fluid to be measured is admitted and discharged from the annular cylinder by suitable valves, and a registering apparatus of the ordinary construction is moved by the piston to indicate the quantity of fluid that passes. A mud trap and a wire gauze grating are also applied to the meter.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 29.—N° 2080.

WARDMAN, James, BALDWIN, James, and BALDWIN, Francis.—(*Provisional protection only.*)—" Improvements in the construction of steam boilers."

Our improved boiler is constructed of two principal parts, namely, what may be called the main boiler and an auxiliary. The main boiler is made of a concavo-convex form in transverse section placed with its concave side downwards, the convex top being about semi-cylindrical. The auxiliary is of a plano-elliptical section, the bottom being flat and the sides and top forming a portion of an ellipse. The length of the boiler is about three times its width.

The top of the auxiliary is connected with the bottom of the main boiler by several wrought iron circulation tubes, and also in the centre or other convenient place by a tube of larger diameter which serves also as a manhole, a space being left for the passage of the flame and other products of combustion between the bottom of the main boiler and the top of the auxiliary.

A series of vertical fire tubes of wrought iron or other suitable metal also passes completely through the auxiliary.

The fire space or furnace is beneath one end of the auxiliary and extends to about midway of its length, where it terminates in a transverse wall or mid-feather reaching the bottom of the auxiliary, so that the flame and heated gases are compelled to ascend the front fire tubes to the space between the two parts of the boiler. The backward end of this space is also closed with fire brick, so that after passing the centre the flame and heated gases descend the back fire tubes into a smoke flue beneath the auxiliary and behind the mid-feather, whence they proceed to the backward end and then rise and pass along two branch flues extending along the sides of the main boiler to the front and leading thence to the chimney shaft.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 29.—N° 2081.

BAXTER, William WARING, Denton, and WOOLLER, Joseph Swithin.—" Improvements in " apparatus for drying textile fabrics and fibrous substances, applicable also for heating or cooling and " evaporating liquids."

The novelty consists of—

A series of metal pipes connected in sets forming grated platforms arranged in tiers one above another, either fixed or moveable, and so that steam, water, or air may circulate therein, and may be enclosed (or not) for air to be forced or drawn through them when used for drying fabrics or other fibrous substances, or immersed in the liquids when used for heating, cooling, and evaporating them.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 29.—N° 2082.

SHAW, Richard, and CLAYTON, John.—" Improvements in looms for weaving."

The novelty consists in—

Suspending the beam by the yarn for the purpose of causing the beam and yarn upon it to act as a weight for weighting the yarn.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 29.—N° 2083.

WITT, Henry.—(*A communication from William Rose.*)—(*Provisional protection only.*)—"A new toy in the shape of a mortar or spring gun."

The novelty consists in—

So constructing the said mortar or gun that on pulling a string attached thereto, in the case of the rtar, and by turning a central spindle, in the case of the gun, a ball is projected at a great velocity from e muzzle of the said mortar or gun.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 29.—N° 2084.

EWTON, Alfred Vincent.—(*A communication from Robert Creuzbaur.*)—"Improvements in liquid meters."

These improvements in fluid meters relate to the use of two double-acting cylinders, two pistons, and o valves with correspondlng ports, the whole so arranged that the valve or valve stem belonging to the e cylinder and piston forms the guide for the other piston and moves with it, and vice versa. Provision made for packing the pistons thus arranged with elastic rolls. The invention also includes a new lanced sleeve valve and a new and improved mode of transforming the reciprocating motion taken from e moving parts into the rotary motion given to the registering apparatus.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, June 29.—N° 2085.

OOMAN, Clinton Edgcumbe.—(*A communication from Auguste Scheurer Rott and Scheurer Rott,* .)—"Improvements in apparatus for bleaching or lixiviating fabrics and skeins."

A pump is combined with the bye washing vessel, and is placed either outside or inside thereof. It aws the liquid from the bottom and discharges it at the top of the vessel, thereby maintaining continuous culation. A pipe supplies steam to the pump for the object of reheating the liquid.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 29.—N° 2086.

ILSON, George Henry.—"Improvements in watches and other timekeepers."

1. Watches and other timekeepers are wound from the exterior by revolving the back, or front, or dome, other part of the case or a piece not forming part of the case, the revolving part being connected by wheels ith the arbor of the mainspring. Means of preventlng ingress of dirt between the revolving part and the ed part are described.

2. Watches and other timekeepers have their hands set or adjusted by rotating a circular plate which ojects through the case, the rotary movement of this plate being transmitted by mechanism to the wheel the minute hand. The circular plate is held by a detent which has an arm projecting through the case, is arm being pressed in when it is desired to rotate the plate.

3. To adjust watches and other timekeepers and to prevent overwinding a small piece is attached to the rrel or other arbor, and a bearing spring presses on the snail piece; when the mainspring is fully wound e bearing spring exerts its greatest pressure, and this pressure decreases as the mainspring unwinds; the rce of the mainspring is thus regulated. The snail piece and bearing spring have each a stop; these ops meet when the mainspring is fully wound and thus prevent overwinding.

[Printed, 10*d*. Drawing.]

A.D. 1868, June 29.—N° 2087.

ROOMAN, Clinton Edgcumbe.—(*A communication from Anthelme Pin.*)—"Improvements in the manufacture of shawls and other like fabrics."

The object is to make shawls in imitation of Indian figured shawls, and without increase in weight. nly one warp is used for the fringes, for the ground, and to connect the wefts on the right side and on the verse side; another and thicker warp is used to form the design only, and is never employed in the body the fabric. This color warp working in a reverse manner to the wefts is the chief feature in the new awl. In each loop are placed a piece thread and a design thread; the piece threads are passed over lifting alds and under lowering healds while the design warp is quite free. At the first throw of the shuttle the o warps rise where the weft should appear on the right side, a lowering heald then falls to connect the ht side, and a lifting heald rises to connect the reverse side, then the card changes and a fresh part of the rp rises for another color, and so on. The ground may be made in several ways.

[Printed, 8*d*. Drawing.]

A.D. 1868, June 29.—N° 2088.

LAKE, William Robert.—(*A communication from Joseph Weatherby Bartlett.*)—" An improved apparatus " for generating and burning the vapour of naptha."

My invention relates to an apparatus for cooking and similar purposes which is heated by burning the vapor of naptha or benzine produced and mingled with the vapor of water and with atmospheric air at the time of combustion.

The naptha I use is the liquid obtained at the first running in the distillation of petroleum. This liquid is colourless and highly inflammable, and has a specific gravity of from seventy two to seventy five degrees. By the application of heat to a tube filled with this liquid it is converted into gas which when properly combined with the vapor of water and atmospheric air burns freely, giving a strong and steady heat without smoke or odour of any kind. The reservoir containing this liquid should be arranged at some distance from the stove wherein the vapour is burned and higher than the burners. The said stove may be provided with one or any desired number of burners, each of which is connected with the reservoir by a tube whereby the said liquid is conducted to the said burners. Each tube is curved or bent in such a manner that the burner stands immediately under a part of the tube which lies horizontally. In this horizontal part is placed a quantity of fine wire compactly coiled or twisted, and this wire forms a large heating surface for the liquid. A cup or basin for containing water is arranged below each burner. The pipes or tubes are provided with cocks or valves whereby the supply of the liquid to each burner may be regulated.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 30.—N° 2089.

DRECHSLER, Francis Joseph.—(*Provisional protection only.*)—" Improvements in the construction of " boilers and furnaces, stoves, or heating apparatus."

The use of a number of superposed heating surfaces proceeding from the furnace or fire carrying the heat through the same in a serpentine or zig-zag course.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 30.—N° 2090.

GLOVER, George.—(*A communication from Laslo Chandlor.*)—(*Provisional protection only.*)—" Improvements in means or apparatus for the combustion of naptha, benzole, and similar liquids."

The improvements are stated to relate to the use of an outer tube capable of sliding on the wick tube and of rising above that tube. When the wick tube is surrounded by another tube of glass or other matter representing a candle, the apparatus is formed with a socket to admit of the lower portion of such outer tube sliding thereon to an extent corresponding with the extent of adjustment which may be desired at the upper portion thereof.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 30.—N° 2091.

BOWER, George.—" Improvements in boilers for heating purposes."

This invention consists of a boiler constructed of cast iron tubes placed either vertically or horizontally, and fitting to each other so as to form a water-tight joint, the circulation being effected by arranging the ends of the tubes so that they communicate one with the other without requiring circulation boxes or receptacles for the tubes. The admission of air to the furnace may be effected by any self regulating arrangement, of which many varieties are now in use, as, for instance, by the action of heated water on expansive liquids, or by a ball and valve arrangement.

[Printed, 10*d.* Drawing.]

A.D. 1868, June 30.—N° 2092.

RANDALL, John, and CRABB, William Ralph.—(*Provisional protection only.*)—" An improved " carriage to be propelled by the manual action of the passenger or passengers."

This invention relates to the construction of a carriage capable of being propelled by the manual action of the passenger or passengers without the use of cranks, levers, or treadles; and consists principally in transmitting rotary motion to the driving axle by means of an endless chain, belt, or band passing round a toothed or grooved (or toothed and grooved) pulley keyed on the driving axle and round a similar pulley attached to a disc or wheel provided with a handle or handles, and placed within easy reach of the passenger or passengers.

[Printed, 4*d.* No Drawings.]

A.D. 1868, June 30.—N° 2093.

BLOMFIELD, Joseph.—" Improvements in stands or tables especially applicable for sewing machines."

Consisting of three or more legs, each leg having a segment of the rim or top of the table firmly fixed to it or in one piece with it; these segments are made to overlap, so that they can be bolted or screwed together.

The legs may also be provided with projections, which meet together in the middle and are inserted into two caps, which being screwed together the legs are securely fastened together.

[Printed, 1s. 4d. Drawings.]

A.D. 1868, June 30.—N° 2094.

BEBRO, Marcus, HOPWOOD, Oswald, and ELAM, William.—" Improvements in mechanism or " apparatus to be employed for numbering and printing tickets consecutively."

A cylinder, the length and diameter of which is proportioned to the maximum amount of type desired to be presented is mounted upon a central screw, longitudinal grooves being formed in the periphery of the cylinder, and type so " set up " or placed in the grooves that when the cylinder is caused to revolve and traverse by means of the screw upon which it is mounted, it will impart a spiral course to the type and cause them to deliver the impression of their numbers or letters consecutively and progressively upon a continuous sheet or strip of paper. The strip of paper is secured by a roller over and from which it passes beneath the second roller which presses the paper on to the moving type of the cylinder, from whence it passes over a third delivery roller on to a spool or reel, or is carried and formed into layers. Inking rollers of ordinary construction are provided, the lower one of which is immersed in ink, and as the cylinder revolves conveys a continuous and required amount of ink to such type as are passing between the top pressure roller and their upper or numbered surfaces. The roller delivering the continuous strip of printing paper is provided with knives, perforators, or piercers to subdivide or pierce the said length of paper into divisions representing tickets, each ticket containing a number or numbers.

[Printed, 8d. Drawing.]

A.D. 1868, June 30.—N° 2095.

BANKS, John Henry.—(*Provisional protection only.*)—" An improved method of constructing buildings " such as mission churches, chapels, schools, or any other buildings where economy of cost is an object; " and for an improved ventilator which may be used in the construction of the buildings generally."

By the use of iron buttress standards placed at defined distances apart, which standards have flanges formed upon them so arranged that the spaces between one standard and another can be filled in with brick, rubble, &c., and further that upon the upper extremity of the standards a shoe is formed to receive the end of roof principals, one side of which shoe is formed by a separate plate, which manner of construction allows the woodwork to be bolted tightly up. The standard is provided with a projecting hook to receive brackets for supporting spouts, and with a slot to receive the wall plate, which wall plate is used to tie the standards laterally to each other as well as to receive the spars and form a transom to the window if desired. The bottom part of the standard is shaped as a bed plate, which may be bolted down to a sill of wood, iron, &c., if necessary, and is further provided with a vertical flange, to which flange are bolted joists that are sufficiently long to go across the building to be attached to the standards on the opposite side. I use iron back plates, which enables me to attach the purlins to the principals which renders their position to each other rigid and perfectly secure, and also one side of the ridge box to principils of roof I also form of a separate plate.

The manner of heating I construct an ordinary cockle stove, which is built in the outer wall sufficiently below the floor line to prevent accident by fire, from which stove an ordinary flue is built, which flue may run along the centre side or whatever direction may be thought desirable; for a length of say 12 feet from the stove the flue is arched in and cut off from the other part by a cross wall forming a chamber, which I call the flame box. In the said cross wall is built a piece of ordinary round or square iron piping, as the case may be, from which pieces of piping are laid continuous lengths of similar piping that are made thoroughly smoke tight by means of flanged end joints or by socket joints having a vulcanized india rubber band round them, or by cement, the nature of which will be hereafter described. The flue will be furnished with a cast iron curb to receive the air grids and terminate in the ordinary manner.

The manner I propose of ventilation is as follows: by fixing small exhaust fans in the roof which will be turned by the action of the wind in a manner as will be hereafter described.

[Printed, 4d. No Drawings.]

A.D. 1868, June 30.—N° 2096.

CLARK, Alexander Melville.—(*A communication from Louis Isaac Cahen, alias Lyon.*)—" Improve-" ments in breech-loading fire-arms and cartridges."

The 1st improvement consists in providing a spring striker producing a more powerful blow than has been hitherto obtainable in central fire breech loaders. The striker is composed of a strong stem received in a cavity of the closing plug, on which stem a spiral spring is placed which is compressed by the backward motion of said plug. The striker has a solid head at its rear end provided with a recess into which a projection on the trigger enters for holding it in the cocked position. The sliding motion of the plug is produced by a hand lever acting on the inclined end of a part connected to the striker head. The cartridge is non-metallic, consisting of a strong paper case containing the powder, cap, and ball, round which the case is tightly twisted at one end. The rear end of the cartridge is provided with a vulcanized india rubber cup enclosing the cap and preventing all escape of gas by expanding at the moment of firing, when it again collapses and falls out easily without leaving any vestige of the case to be extracted. The improvements further relate to modifications in the gun to adapt it for firing metallic cartridges, in which case an extractor is applied to the sliding plug. The extractor is split at one end so as to be held firmly in its groove, or instead of grooving the bolt the end of the extractor may be received [*in a recess made**] in the rear end of the sliding plug, so as to extract the cartridge case on drawing said plug backwards in opening the breech.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, June 30.—N° 2097.

DAGLISH, William.—" Improvements in kilns for burning bricks, tiles, and pottery, and in consuming " smoke in chemical furnaces and boiler furnaces."

The fire-places have perforated bottoms and back walls through which air from the flues after passing over the fire carries the heated gases into the interior of the kiln and from thence to the chimney at back.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, June 30.—N° 2098.

ALDER, George.—" Improvements in screw propellers for propelling vessels."

The boss of the propeller instead of being keyed firmly and immoveably on the shaft is connected therewith by a cross pin on which it is capable of being made to rock while the shaft rotates.

[Printed, 10*d.* Drawing.]

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* The words " in a recess made " are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

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WORKMEN'S CLUB INVERNESS

15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.

DESCRIPTIVE INDEX

OF

PATENTS APPLIED FOR AND PATENTS GRANTED,

BEING

THE ABRIDGMENTS OF PROVISIONAL AND COMPLETE SPECIFICATIONS

For the Quarter ending 30th September 1868.

Printed and Publiſhed by Order of the Commiſſioners of Patents

UNDER THE

ACT of 15 & 16 VICTORIÆ, Cap. 83. Sec. XXXII.

BY BENNET WOODCROFT,

CLERK TO THE COMMISSIONERS OF PATENTS.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
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1869.

[Price 1s. 8d.]

PREFACE.

PREVIOUS to the year 1867 the Abridgments of Specifications were published in classes nly ; and after the publication of the first volume of a class, bringing the Abridgments own to a particular date, considerable time necessarily elapsed before the appearance f the second part or continuation of the class. To obviate the inconvenience thus occasioned, the Commissioners of Patents made the following rule :—

PATENT LAW AMENDMENT ACT, 1852.
15 & 16 VICT. c. 83.

> By the Right Honourable Frederic Lord Chelmsford Lord High Chancellor of Great Britain, the Right Honourable John Lord Romilly Master of the Rolls, Sir John Rolt Her Majesty's Attorney General, and John Burgess Karslake Esquire, Her Majesty's Solicitor General, being four of the Commissioners of Patents for Inventions under the said Act.

It is ordered as follows :—

After the 31st day of December 1866, every applicant for Letters Patent shall deliver at the ffice of the Commissioners, with his provisional specification, or (when a complete specification filed with the petition and declaration) with his complete specification, an abridgment, in uplicate, under his hand or the hand of his agent, of such provisional or complete specification. The abridgment must set forth the name of the applicant, the title of the invention, and describe, as short a manner as possible, the features of novelty which constitute the invention. The bridgment and the copy thereof must be written upon sheets of foolscap paper, and upon one side nly of each page, leaving a margin of one inch and a half on the left-hand side of the page.

(Signed) CHELMSFORD, C.
ROMILLY, M. R.
JOHN ROLT.
JOHN B. KARSLAKE.

Dated the 17th day of December 1866.

The Commissioners also directed that the Abridgments so delivered should be printed nd published in the following manner, as explained in their Report to Parliament for he year 1866 :—

> " These abridgments will be printed and published in quarterly volumes after the expiration of the six months' protection. Thus the abridgments delivered at the office in the quarter ending 31st March will be ready for printing in the quarter ending 30th September, and the volume will be published in the ensuing quarter. The volumes will be of the same size as the chronological, alphabetical, and subject-matter indexes (imperial 8vo.), and constitute in fact a fourth kind of index, viz., a descriptive index in a chronological form. It is also intended to publish these abridgments from time to time in classes, according to the plan which has been in operation from the year 1856."

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Letters Patent have not been granted or are void for want of a Final Specification. the end of the Abridgment is appended the price of the printed copy of the Specificatio with the word "Drawing," "Drawings," or "No Drawings," as the case may b The Abridgment itself is printed exactly as furnished by the Applicant for Lette Patent; no attempt being made to correct errors in spelling or grammatical constructio or to supply words which have been omitted. It is deemed necessary to give thi explanation, to account for the errors which are to be found in the printed Abridgmen

B. WOODCROFT.

June, 1869.

DESCRIPTIVE INDEX

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THE ABRIDGMENTS OF PROVISIONAL AND COMPLETE SPECIFICATIONS

For the Quarter ending 30th September 1868.

A.D. 1868, July 1.—N° 2099.

), **Robert**.—" Improvements in machinery for spinning or twisting tobacco and otherwise preparing
: sale."

Provisional Specification describes improvements in the mechanism by means of which the tobacco
ed together. Also improvements in the reel which receives it, and which is made in parts to allow
roll being compressed with the reel in or to facilitate its withdrawal. Also improved oiling apparatus.
nprovements in apparatus to contain the tobacco whilst it is uncoiled. Also other improvements in
ery for spinning or twisting tobacco and otherwise preparing it for sale.

nted, 1*s*. 6*d*. Drawings.]

A.D. 1868, July 1.—N° 2100.

), **Thomas**, and **BLACK, Walter Shaw**.—" Improvements in machinery for twisting tobacco."

Provisional Specification describes apparatus whereby twist or cord of tobacco may be made the core
h is but slightly twisted, whilst the covering leaves are lapped rapidly around it in a rapid spiral.

nted, 1*s*. 10*d*. Drawings.]

A.D. 1868, July 1.—N° 2101.

'**KES, William**.—(*A communication from Leon Hamar.*)—" Improvements in rotary steam
nes."

improvements relate to arranging rotary steam engines in which the steam constituting the motive
acts on floats fitted in pairs two and two, each pair being fitted to a frame, and which frames are
ncted to pass freely one in the clear of the other, both passing through the same common and constant

to applying springs between the floats and their frames, insuring close fitting and compensating for

the irregular shape or contour of the interior of the engine, which as combined with the paddle
o as to insure a uniform and unceasing eccentric rotary motion and give control over the direction
eel is desired to take.

to an adjusting disc applied in the interior of the engine to insure close fitting between the wheel
e side of the engine, and to compensate for wear.

to the plates applied between the wheel and the gliding floats having the object to keep out steam
ne interior of the wheel.

nted, 1*s*. 2*d*. Drawings.]

A.D. 1868, July 1.—N° 2102.

BROOKES, William.—(*A communication from Leon Hamar.*)—" Improvements in electro-magnetic " railway breaks."

The invention relates to the application of electro-magnetic current so that by its effect gearing may be engaged into the twists or tooth of an endless screw fixed to one of the axles of the carriages of a train, such gearing driving a drum or winding up on to its own spindle a chain which in pulling the principal bar of the break brings the wheels to a dead stand.

This break allows of existing breaks to be used henceforth as they have been used or to recur to the electro-magnetic breaking; also to the application of a mechanical lock very much resembling the lock of a gun, which has the object to supply very large galvanic batteries. By these means the galvanic battery has no other end but to open such lock, causing the connection between gearing and the endless screw fixed to the axle of the carriage.

The application of wedges introduced to insure and control the position of the driving spur wheel.

[Printed, 1*s.* Drawings.]

A.D. 1868, July 1.—N° 2103.

BROOKES, William.—(*A communication from Leon Hamar.*)—" Improvements in meters for measuring " water and other liquids."

1. The improvements relate to the application of paddles from a central wheel constructed in such manner that water running through the apparatus acts on the paddle, measuring quantities of liquid and driving gearing to indicate quantity measured.

2. The application of a flexible brass belt in the interior of the paddle chamber adjustable and serving to augment or diminish the inner space of that chamber.

3. To an air tight chamber for the wheelwork with the object of keeping out water from the register.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 1.—N° 2104.

SMITH, James Alexander. — (*Provisional protection refused.*) — " Improvements in photographic " apparatus."

For improvements in photographic apparatus designed to correct an imperfection and inaccuracy in the perspective foreshortening and proportions of photographic images or photograms, and also to correct an imperfection and defect in the actinic efficiency and homogenous purity of the colored rays proceeding from objects photographed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 1.—N° 2105.

CRAILSHEIM, Charles Frédéric.—" Improvements in bottles for effervescing liquids and in stoppers " for such bottles."

I construct my improved bottles with the ordinary orifice at the end of the neck and another orifice at the side. The orifice of the neck is provided with a metal stopper hinged to a metal ring secured on the neck. The said stopper is faced to fit the ring, and provided with an india rubber cushion to make it air tight, and when closed is secured by a catch fitting a socket in the ring. The side orifice is provided with a syphon tube and cock. When poured from the first orifice the liquid will be moderately effervescent, but when drawn from the syphon it will be in a foaming or frothing condition.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 2.—N° 2106.

TAYLOR, Alfred.—(*Provisional protection only.*)—" Certain improvements in neck ties or cravats, and in " fasteners for the same, and which fastener may be used as a fastening in combination with shirts and " shirt collars."

The novelty of this invention consists in the arrangement of neck ties and cravats that the ends may be secured together when in use by a metal or other stud, and which stud may also be made the means of securing or holding together the collar of the shirt and detachable collar, thus rendering buttons and cravat pins unnecessary.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2107.

ALEXANDER, Andrew.—(*Provisional protection only.*)—" Improvements in carriages and locomotive " engines for working on steep inclines and sharp curves, but some of them applicable to locomotive engines " generally."

1. The application of a water-pipe and cock by which a small stream of water can be supplied to the slide-valves & pistons when the engine is running without steam.

2. The formation of the barrel of boilers with bevilled ends so that the tubes point downward towards the smoke-box.

3. The formation of wheels in two parts, the outer working on the inner part, after the manner but to a limited extent of a ball & socket joint.

4. The application of a spring valve to steam regulators, so as to prevent or diminish the slipping of driving wheels.

5. The application to central rail engines with vertical axles of a method of coupling the vertical axles on each side of the engine by *one* beam only.

6. The application of a glass gauge moveable vertically to locomotive boilers.

7. The application of a reversing lever to locomotive engines which can be moved either by hand or by a straight screw, the lever being controlled by a parallel motion.

8. The application to central rail engines of vertical wheels fixed on horizontal axles for acting upon the central rail, such axles being driven in the usual manner by coupling rods, or in some cases forming the actual carrying axles of the engine, and the vertical wheels act by their faces on the central rail and not by their circumferences as ordinary wheels do.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 2.—N° 2108.

FRANCIS, Lewis.—"Improved compositions applicable to printing purposes and to the manufacture of "printing materials and the production of emery cloth, artificial hones, and other polishing surfaces."

The novelty of this invention consists in the combination of glue or other gelatinous or of any suitable gumming material with glycerine to produce a firm yet elastic substance for stereotype plates and plates for printing upon rough and uneven surfaces; also in the combination of emery or other gritty cutting material or of any suitable metallic preparations with a compound of glue or of its equivalent and glycerine to produce a firm yet elastic composition for polishing purposes either in a solid form or as a coating to form a polishing surface.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 2.—N° 2109.

HENSON, Henry Henson.—"Improvements in the construction of railway wagons and trucks."

This invention consists in constructing the under framing and the body of railway wagons or trucks in two separate parts, and supporting or suspending the latter in such a manner from or by the former that it shall be capable of moving or swinging more or less freely independent of the under framing, and thus preventing the materials contained in the wagon or truck from being damaged so much as is the case by the present rigid mode of construction.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 2.—N° 2110.

DEAN, William, and ANDREW, Richard.—"Improvements in machinery or apparatus employed for "stopping the loom upon the breaking of a weft thread or threads."

The improvements are mainly applicable to looms for elastic webs, ribbons, fringes, or other narrow fabrics. A wire is used at one or both selvages of each breadth of fabric and secured to a rocking lever having one end inclined on its top side and pointing inwards towards the batten, the point of the incline points slightly upwards when the unbroken wefts press on it, bnt when a weft is broken the inclined end of the lever is depressed by its own weight, and while so depressed a reversely inclined piece secured to the batten slides on the incline of the rocking lever, thereby elevating the outer end of the lever which rises an arm secured to a rocking shaft which has upon it a catch lever which takes into a catch or slides by the side of a boss or equivalent upon the hand rod or equivalent, which throws the strap from one pulley to the other; the arm on the rocking shaft being raised the catch lever will be thrown out of the catch or clear of the boss on the hand rod or equivalent, leaving it free to move and throw the strap on to the loose pulley to the loom. The rocking shaft carrying the lever and catch lever lies in bearings on the lower side of the t framing, and the hand rod or equivalent lies in bearings in front of the framing and it has a spring ich operates on it when the catch lever clears the catch or boss.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, July 2.—N° 2111.

NFOLD, Jonathan Dumbleton.—"Improvements in the manufacture of and apparatus for making "bricks, tiles, and other articles produced by expressing through moulding orifices the clay or materials of "which they are composed."

Application and construction of a scraper to rollers, also of cheeks and rollers of a porous material or otherwise admitting of the passage of a lubricant. Also of the die or compression chamber of adjustable rollers and plates of metal or other material, or wholly in one or more pieces of blue lias clay, Ransome's patent stone, &c.; also of travelling cutter or divider, acting without stopping expressing action. Also of mechanical arrangement for carrying the clay and regulating motion of cutting wheel and passage of clay.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, July 2.—N° 2112.

POYNTER, John Edgar, and PATTERSON, Thomas Law.—(*Provisional protection only.*)—"Improvements in obtaining or manufacturing saltpetre, iodine, and bromine."

This invention consists in obtaining saltpetre by adding nitrate of soda to the lixivium from kelp or seaweed residues; and in treating the mother liquor (after removing the saltpetre) with vitriol for the purpose of decomposing the sulphur compounds and of subsequently obtaining the iodine and bromine by precipitation and otherwise.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2113.

SCOTT, Edward John.—"Improvements in ornamenting boots and shoes."

The invention consists in printing in oil, varnish, or other washable pigment on the leather used for making the uppers or other ornamentable parts of boots and shoes ornamental devices composed of dots or short strokes imitating stitches.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2114.

PAVEY, Frederick Archiabald.—(*Provisional protection only.*)—"An improved marking board for billiards, bagatelle, and other games requiring to be scored."

The novelty of this invention consists in making marking boards with rotating discs having figures painted thereon, so as to mark units, tens, hundreds, and one thousand and upwards. The discs are so constructed that they cannot be moved backwards, and at each movement a click or bell sounds.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2115.

HALL, Dennis.—"Improvements in the construction of furnaces, and in apparatus for supplying them with fuel."

The novelty in this case consists in forming furnaces with a number of apertures one above another in the point where the door is usually placed, and fitting the same with closing plates made to traverse the apertures and push the fuel into the fire or furnaces. The push-plates serve the double purpose of doors and fuel-feeders.

[Printed, 1*s.* Drawings.]

A.D. 1868, July 2.—N° 2116.

GREGSON, John Brumwell.—(*Provisional protection only.*)—"An improved production of sulphate of lead to be used as a pigment or for other purposes."

In this invention a sulphate of lead possessing what painters term "body" is obtained by decomposing a solution of chloride or muriate of lead by means of a solution either of sulphate of soda, or of sulphate of magnesia, or of sulphate of iron, or by means of a mixture of sulphate of soda and sulphate of magnesia in solution.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2117.

PAVY, Eugene.—"Improvements in treating and preparing certain vegetable and animal fibres to manufacture a new description of fabric or stuff applicable to various useful and decorative purposes."

This relates to certain processes of treating certain vegetable and animal fibres in order to produce pulp and to manufacture therefrom a felted paper fabric or stuff applicable to various purposes.

The vegetable matters employed are plants of the nettle, corchorus, and other tribes; the barks of the mulberry tree and others, crotolarias and others, saccharine plants, flaxes, hemps, cottons, and in general all plants of a sufficiently felty texture to be employed either alone or mixed in this manufacture.

The animal matters are wool, silk, bulls' pizzles, skins, and others.

Minerals are also employed, viz., powdered gold, silver, mica, or others mixed with the pulp in the trough to produce sparkling effects.

Lixiviation or lye-washing can be accomplished in two ways. Operating on matters easily disintegrated vash them with milk of lime or preferably caustic alkali at 2° or 3° Beaumé, under a pressure of steam from 3 to 4 atmospheres for 3 hours; then pass them through the washing trough until the parts are luced to lengths of from $\frac{1}{12}$th to $\frac{1}{8}$th of an inch, and then bleach them in the bleaching trough as rags are ated.

Hard matters difficult to disintegrate are submitted in a close vessel to a pressure of steam of from 6 to 8 nospheres for 4 hours, employing preferably a solution of caustic soda at from 6° to 8° Beaumé, when the tters will be ready for bleaching. This mode having disadvantages, I prefer washing in milk of lime or ak alkali, and proceeding afterwards as follows:—The matters are submitted to the action of gaseous orine, when they assume a bright yellow red color; then subjected to the washing and bleaching ughs, when after a thorough washing for 2 cwt. of pulp 2½ to 5 gallons of caustic alkali at 4° Beaumé are ured into the trough. This second washing or lye which may be hot or cold rapidly causes perfect integration, and the operation is completed by thorough washing, and by pouring into the trough when water becomes clear about ¼ pint of sulphuric acid. From 3 to 6 pails of chloride of lime or soda at 4° aumé for 2 cwt. of pulp are now poured in the trough, and when the matter is nearly white it is washed a tle and about 2 lbs. of crystals of soda and a like quantity of sulphate of alumina are added to the trough; e bleaching is terminated by pouring ¼ pint of sulphuric acid into the trough, and by washing the matter ice more. The same bleaching process is employed after the two first modes of lye washing described.

Another method of bleaching matters which will not bleach after washing in milk of lime or alkali or in loride of lime at 4° is as follows:—After having thrown into them ½ pint of sulphuric acid they are mediately washed, and from 2½ to 5 gallons of caustic soda are poured into the trough to decompose the mmy resinous matters which prevent the bleaching; when the liquid has become black it is washed ain and bleaching as before described is recommenced. This last process effects the bleaching by an ificial action of gas.

Bulls' pizzles and skins as well as wool and silk are bleached by sulphur vapors.

The matters are now reduced or triturated by beating engines or otherwise, care being taken that the aments be kept to a length of from $\frac{1}{20}$th to $\frac{1}{5}$th of an inch. The matters are of course selected in relation the purpose for which the manufactured felted fabric is intended.

The felts are mostly colored or dyed in the troughs, and are rendered non-flammable there also when sired.

When great suppleness is required from about 2 to 6 lbs. of white palm or other soap for 200 lbs. of pulp e poured into the finishing trough before the pulp descends in the vessels.

The felted fabrics are applicable to a great number of uses, more especially for clothing, upholstery, and nting.

[Printed, 6*d*. No Drawings.]

A.D. 1868, July 2.—Nº 2118.

NDER, David.—(*Provisional protection only.*)—"Improvements in thrashing machines."

This invention consists essentially in forming the beaters of the stripping drum of thrashing machines th four or other number of rows of nearly radial tapered stripping pins or teeth attached to longitudinal rs secured across the whole length of the drum, which pins, at their respective distances apart, revolve or rk up into corresponding tapered circumferentially curved grooves formed on a movable segmental iron rt of the casing of the drum near the feeding rollers, capable of being regulated and fixed at a proper stance from the drum, so that the stripping teeth will carry the heads of the corn or crop to be thrashed or ripped into the grooves as fed in through the rollers, and rub and strip off the grain or seeds against the des and bottoms of the grooves made with radially ridged or undulating surfaces and edges, and circumrentially serrated respectively for that purpose, which by the velocity of the drum and rubbing action of e teeth and grooves strips off the grain completely before the heads are carried past the segment of ooves, and the stalks or straw is thrown on to any of the usual removing carriers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 2.—Nº 2119.

LARK, Alexander Melville.—(*A communication from Paul Baudet.*)—"Improvements in barometers and other pressure indicators."

The invention consists in providing a means of indicating at all times the tendency to rise or fall of the rometer or pressure guage consequent on the increase and decrease of pressure.

According to one mode I apply a small spring blade on the index hand, one end of which spring rests on dial, and as the hand moves one way or the other so is the spring inclined in one or other direction, thus rding a clear indication of the tendency to rise or fall.

[illegible]

The improvements are applicable to [illegible] and other [illegible] and pressure gauges of all kinds.

(Printed, [illegible] Drawing.)

A.D. [illegible], July 1.—N° [illegible]

CLARK, [illegible].—(A communication from Jules [illegible].)—"Improvements in the treatment or preparation of flax, hemp, jute, and other fibrous matters for spinning purposes, and in apparatus for the same."

I manufacture threads of all sizes from short stapled flax, hemp, jute, and other raw fibres, and also from [illegible] resulting from the [illegible] or carding of these matters. I first pass the fibres through a [illegible] such as shown in the accompanying drawing, provided with a brush or roller for [illegible] the fibres. The fibres are then washed to remove the gummy matters, bleached or dyed, again passed through the above apparatus for opening the fibres, and the length of the fibres equalised. The fibres are passed through a drawing frame provided with a cleaning brush, and then through a roving frame [illegible] a [illegible] action. The fibres thus prepared may be spun in the usual way.

(Printed, [illegible] Drawing.)

A.D. 1868, July 2.—N° 2121.

WILKINSON, ARTHUR [illegible].—(A communication from Bergen Long.)—"Improvements in carts."

The improvements relate to devices for elevating the forward end of a [illegible] cart when descending inclines in order to relieve the back of the beast by throwing more of the load upon and back of the axle, and also to devices by which such apparatus is made to act in unison with a brake upon the wheels.

(Printed, [illegible] Drawing.)

A.D. 1868, July 2.—N° 2122.

JOHNSON, JOHN HENRY.—(*A communication from François Lebacq.*)—"Improvements in shoes for horses "and other animals, and in the method of securing the same to the hoof."

This invention consists in fastening the shoes of horses to their feet by means of an adhesive material.

(Printed, 4d. Drawing.)

A.D. 1868, July 2.—N° 2123.

JOHNSON, JOHN HENRY.—(*A communication from Rufus Spaulding Merrill.*)—"Improvements in the "construction of bridges."

This invention relates to a method of constructing bridges whereby the temporary framework or scaffolding ordinarily employed to support the main structure during the progress of the work is dispensed with, and consists mainly in the use of two or more levers projecting from the opposite sides of the space to be spanned and meeting in the centre, each lever being composed of a series of superposed layers, and each layer extending a certain distance in advance of the one immediately below, thus increasing by so much the projection of the lever.

(Printed, 10d. Drawing.)

A.D. 1868, July 3.—N° 2124.

ROUSSEL, CHARLES.—"Improvements in machinery or apparatus for spinning, doubling, and twisting "fibrous substances."

This invention consists in a frame for spinning and twisting fibrous materials in a continuous manner.

This frame consists of a framework on which are arranged the four principal parts of the mechanism, as follows:

Firstly. A beam and a roller on which the rovings coming from the cards are wound. Secondly, two pairs of drawing cylinders. Thirdly, a mechanism for drawing and twisting simultaneously, consisting of two tubes turning one in the other on a vertical axis; the outer tube carries at its upper part two horizontal rollers turning on a horizontal axis. Fourthly, a second mechanism for simultaneously drawing and twisting, consisting of a tube and a rod turning concentrically on a vertical axis. The rod in the interior carries a horizontal plate giving motion to a vertical disc, on the arbor of which is a bobbin, the spindle of which is placed on a fork above the outer tube. The action of the mechanism is as follows:—

The roller unrolled by the beam delivers the roving to the first drawing cylinder fluted or not, and then to the first simultaneous drawing and twisting mechanism. The thread is taken up by the horizontal rollers which draw and twist it by the double horizontal and vertical motion. It passes through the interior tube and is wound on the spool of the second mechanism, where it is again drawn and twisted.

By means of gearing and pullies the drawing and twisting can be increased and diminished at will. The thread can be doubled or a double twist be made by substituting for the first drawing and twisting mechanism a spool carrying the thread.

In the same manner the direction of the twist can be changed at will.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 3.—N° 2125.

KANE, Andrew.—(*Provisional protection only.*)—"Improvements in apparatus to be used for the "manufacture of tobacco pipes."

The feature of novelty which constitutes this invention is the arrangement and construction of moulds whereby the whole pipe can be moulded and the bore of the "staple" formed at one operation ready for the finisher.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 3.—N° 2126.

JOHNSON, John Henry.—(*A communication from the Incorporated Company "Debré and Grange," and Paul Pasgnier.*)—"Improvements in machinery or apparatus for the manufacture of paper pulp."

This invention consists in employing in the vat containing the pulp and in proximity to the cylinder ordinarily employed an additional apparatus to feed the pulp between the teeth or blades of the cylinder and those of the block in lieu of causing the cylinder itself to agitate and thus effect the supply of the pulp as well as operate its trituration as in the ordinary manner.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 3.—N° 2127.

BENNETT, George, and WOODCOCK, James.—"Certain improvements in the method of and means "for effecting communication between guards, passengers, and engine drivers on railways."

The novelty of the invention consists in the application, adaptation, and use of the power derived from the motion or revolution of the wheels of each carriage, van, truck, engine, or tender for the purpose of actuating a revolving fan to create a current of air which may be applied to sound a whistle or other alarum outside the carriage from which the communication is desired.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 3.—N° 2128.

WARD, Joseph.—(*Provisional protection only.*)—"Improvements in the working of locomotive "engines."

The novelty consists,—

In the employment of an air valve in communication with each steam chest for supplying air to the chests and cylinders when the pistons and slide valves are working with the steam shut off.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 3.—N° 2129.

BROWN, John Borlase.—"Improvements in furnaces for calcining ores and other mineral "substances."

A close furnace and an open furnace are combined in one by converting the space between the two arches of a close furnace into an open furnace, the top of the lower arch being made level for the purpose; the stance between the arches is increased and the lower arch strengthened if necessary. The ore is supplied the open furnace and afterwards descends into the space which forms the close furnace below the lower rch.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 3.—N° 2130.

NEWTON, William Edward.—(*A communication from William Farr Goodwin.*)—"Improvements in "automaton toys."

The invention consists of a walking figure or toy in which when drawn forward over the ground the legs and feet will move forwards and backwards in imitation of a man walking.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 3.—N° 2131.

HENRY, MICHAEL.—(*A communication from Emile Peltier and Albert Paillard.*)—" Improvements in the " manufacture and construction of receptacles for preserves and other provisions."

The object of this invention is the manufacture of boxes, vessels, or receptacles for containing jams, preserves, and other provisions to be preserved from atmospheric influences.

The receptacle is made of tin, tin plate, or other metal, on which a varnish or coating is directly applied and fixed by heat or otherwise, thereby preserving the metal from oxidation and the contents from discoloration and injury. Various varnishes or coatings may be used, but the one preferred consists of gum and linseed oil, and essence of turpentine.

In the bottom of the receptacle is one or more orifices through which the jam or other provision is inserted, and when filled the hole is closed by a cap which may be provided beforehand with solder or cement, so as to fasten it instantly by a soldering iron. The cover overlaps the rim, and its flange or lip drops over a neck or recessed part of the receptacle, and a ring or guard is placed round it of sufficient length to facilitate its removal when the box is to be opened.

The bottom is first convex on the outside, and when the contents of the receptacle are poured in hot they shrink as they cool, producing a vacuum inside the receptacle, and the bottom is pressed inward by the atmospheric pressure against the contents which it packs tightly.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 4.—N° 2132.

MULLER, JAN ANTHONY.—" An improved meter for regulating and registering the flow of liquids and " gases."

This invention consists of a cylindrical vessel in which works a piston or diaphragm, the said piston or diaphragm acting on tappets in communication with slides or valves for regulating the admission of the liquid or gas into the cylinder.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 4.—N° 2133.

HEAD, JEREMIAH.—" Improvements in furnace grates and apparatus or appliances to be used therewith."

An improved step grate which can be run in and out of the furnace at pleasure upon wheels supplied for the purpose.

The bars are made to move somewhat after the manner of a Venetian blind whilst being opened and closed, and by this movement the fuel is gradually moved whilst burning to the lower end of the furnace.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 4.—N° 2134.

FRYER, ALFRED.— " Improvements in the concentration and treatment of saccharine and saline solutions, " and in apparatus employed therein."

The gases or products of combustion from a furnace are brought into direct contact with the solutions, or in case of some saccharine matters the heated carbonic acid gas given off by limestone during roasting is brought into direct contact therewith. Several modes and arrangements are described for bringing the gases into direct contact. For beetroot juice limestone is placed in the furnace or flue and the evolved carbonic acid mixed with the products of combustion is brought into contact with the juice so as to neutralize the alkali therein.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 4.—N° 2135.

ALBINI, AUGUSTO.—" Improvements in mariners' or ships' compasses."

This invention consists in so constructing mariners' or ships' compasses as to make them capable of registering at short intervals the course steered by the ship. Under the suspended compass card a metallic ring is fixed, the said ring being provided on its under side with letters, figures, or signs, to indicate the compass points and to act as printing types. By means of clockwork a piston or rod is made to rise and fall at fixed intervals. On its descent it depresses the ring described, and causes the types on its under side in the direction of the ship's head to press a moistened silk tape and chemically prepared paper slip upon a cushion, and thereby to mark or print on the paper slip the letter or sign on the ring at the point of contact.

arrangement will produce novel effects. When I make the structure of narrow lights I am able to give the outline almost any shape and a graceful and ornamental appearance. Amongst the advantages of this invention are these :—(1.) The buildings may be erected in any form and without the use of bent glass. (2.) Their extreme lightness of construction combined with strength and durability. (3.) Plants may be exposed to the atmosphere when desired or pure air admitted in any required quantity and at many points, thus giving complete ventilation. (4.) Variety of design is attainable at small cost. The building may be glazed with or without employing putty.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 4.—N° 2140.

CLARK, Alexander Melville.—(*A communication from François Jean Guillaume Gobin, alias Daudé.*)—" An improved fastening for boots, shoes, and other articles."

The fastening is composed of a hook and button or stud combined, which are arranged along each side of the opening in the article to be secured. A lace is then passed alternately round the hooks on each side and secured by tyeing.

The hook is formed of metal or other material, and is provided with a stem to be inserted in the article, and then rivetted so as to secure it thereto, forming a button head.

The fastening is applicable to boots, shoes, articles of dress, bags, and otherwise.

[Printed, 8*d*. Drawings.]

A.D. 1868, July 4.—N° 2141.

SLATER, George.—(*Provisional protection only.*)—" An improved machine for plaiting or doubling strips " or sheets of cloth, paper, and other materials."

My invention relates to a machine for plaiting or folding strips of linen, cotton, or other fabric to form tucks or flounces for ladies' skirts and other articles of clothing. I employ smooth or plain cylindrical pressing rollers or a single plain roller arranged in combination with a vibrating or reciprocating folding bar or plate. The rollers are heated by gas or otherwise. The end of the strip to be plaited is inserted between the rollers which draw or feed it forward. The said strip as it is drawn between the rollers passes under the folding bar whose edge lies upon the lower roller or upon a table. The said bar is caused to vibrate over the surface of the roller or table by means of a crank or eccentric geared in connection with the roller, and at each vibration it forms a plait or fold, which is instantly carried forward and compressed between the rollers. The machine may be provided with a driving pulley and driven by a steam engine, or may be operated by hand or other power.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 6.—N° 2142.

KILNER, James, OCLEE, Frederick Henry, and BURNS, Edward.—(*Provisional protection refused.*)—" An improved cork drawer."

Consists of an instrument with a bent point to be passed between the cork and the neck of the bottle so as to bring the bent part below the cork, and by withdrawing the instrument the cork comes with it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 6.—N° 2143.

JENSEN, Peter.—(*A communication from Heinrich Pollack and Albert Edwin Schmidt.*)—" Improvements " in sewing machines."

The employment of toothwheelgearing for obtaining a righthanded spoolhook, the flywheel having a toothwheel (of soft metal) fixed to it gears into two pinions (of hard gutta percha; one works the spoolhookspindle which carries a double eccentric for the feed; the other works the needlebar by a slot crank. The upright pillar carrying the bobbin is at its lower end screwed into the frame and carries a loose ferrule which carries the bobbin; a dishshaped washer on the top of this ferrule receives a spring which at its upper end abuts against the regulating nut on the spindle. Thus the spindle can be removed and a new bobbin fitted without disturbing the spring and its tension. The stitchregulator is a lever which can be made to press the feedbar more or less away from its eccentric. The needle is straight and as well as its socket formed alike and of a circular section except for about ¼ of its periphery which is flat. The needle bottoms in its socket. The bobbin filler is in the frame of the machine, and is worked by an indian rubber roller pressing against the flywheel; its spindle for the purpose of drawing it in and out of gear has two grooves turned in it with the space between turned a gentle slope towards each to allow the spring (which may be a straight piece of steelwire supported at each end and pressing with its middle part against the spindle) le into one or other of the grooves. The form of this machine because of its axially straight and circumentially round arm through which the needle bar spindle passes is such as to afford facility for taking hold the machine.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 6.—N° 2144.

RYER, Alfred.—"Improvemnts in the mode of treating for evaporating and concentrating purposes cane juice, beetroot juice, and other saccharine and other solutions and liquids, and in the construction of apparatus for the concentration of saccharine and other solutions and for the evaporation of liquids."

This has partly reference to the inventor's former Patent, dated 14th February 1865. The revolving linder in the old apparatus has for a stated purpose its curved blades placed at from ⅜ths to ⅛th of an inch art, that is to say, as closely together as can be done without interfering with the flow of the liquor. The ddles which have been used with the range of trays are made of reduced height, not more than 1½ inches ove the top edge of the tray, so that the scum can flow freely. The revolving cylinder is placed at the de of and on a lower level than the trays, and a tube is used to convey heated air from the air heater to the linder. The part of the air tube adjoining the cylinder is for reasons described made of cast instead of rought iron; and to provide for expansion an expansion joint is introduced into this tube. To avoid pening a door in the air tube to inspect the cylinder a lantern is employed which throws light into the ylinder; a peep-hole is also used. The supports of the air tube and the supports of one end of the cylinder re attached to a single sole plate, while the supports of the other end of the cylinder and those of the fixed ntermediate piece of the fan of the engine and of the gearing driving the cylinder are attached to another ole plate. The two sole plates are kept apart by tie rods. To adjust the face of the air tube and the face f the intermediate piece to the face of the cylinder each of the former is placed on two pillars having djusting screws, they have besides brackets with a tie rod and adjusting nuts to fix them apart. A funnel s brought out of the side of the air tube, and is caused to deliver the substance operated on into a gutter outside the cylinder, along which it flows back into the other end of the cylinder; this is useful when it is desired to make sugar in crystals. Trays for submitting shallow streams of saccharine solutions to fire or roducts of combustion are made of malleable cast iron, which is more durable and less liable to fracture han the cast iron hitherto employed. To make a cast iron tray less liable to fracture the inventor casts the bottom by itself and attaches the sides afterwards. Thin wrought iron trays have sometimes been used but re liable to warp, the inventor therefore strengthens them by one or more strong trays, or he makes the rays thicker, say not less than ⅜ths of an inch. To stiffen the wrought iron trays the inventor makes the ibs or baffles deeper and thicker than usual, say not less than 1¾ inches deep and thicker than ⅜ths; and e sometimes makes the ribs of steel. He employs steam or vapor at or below 212° to heat one side of ny division or diaphragm, and air is made to pass over the other side; the air is thus heated and is then pplied to evaporate or concentrate by bringing it into immediate contact with the liquid. The inventor so laces the boiler of the furnace used both for raising steam and concentrating saccharine solutions that the roducts of combustion act first upon the boiler and then pass away to concentrate the solutions. In contructing furnaces for burning megass as fuel for concentrating saccharine solutions the inventor makes a helf on which the megass when damp is partly dried before falling on the hearth to be burnt; or a drying hamber is made heated by the waste products or by radiated heat, the megass when dryed passing directly herefrom into the furnace; or the megass is placed in a revolving or reciprocating chamber through which eated air or gas is passed, or in a chamber provided with agitating arms; or a series of shelves is made, rom one to another of which the megass falls, while being acted upon by heated air and gases.

[Printed, 6*d*. No Drawings.]

A.D. 1868, July 6.—N° 2145.

DAVIES, George.—(*A communication from Meliton Martin.*)—"Improvements in locomotive engines."

This invention consists in the direct application to locomotives of one or more rotary engines, giving motion to one or more pairs of horizontal wheels, which pressing against a central rail enable the train to travel over heavy gradients. The machinery may be composed of a rotary steam engine, two shafts and two horizontal wheels, and the frames, screws, and springs to produce any required amount of pressure on the central rail. This apparatus can be placed either on the locomotive or on its tender.

[Printed, 3*s*. 10*d*. Drawings.]

A.D. 1868, July 6.—N° 2146.

WALDENSTRÖM, Eric Hugo.—"An improved arrangement of mechanism to be employed for manu-"facturing metallic rivets or articles of a similar description."

A.D. 1868, July 1.—N° 2102.

BROOKES, William.—(*A communication from Leon Hamar.*)—" Improvements in electro-magnetic " railway breaks."

The invention relates to the application of electro-magnetic current so that by its effect gearing may be engaged into the twists or tooth of an endless screw fixed to one of the axles of the carriages of a train, such gearing driving a drum or winding up on to its own spindle a chain which in pulling the principal bar of the break brings the wheels to a dead stand.

This break allows of existing breaks to be used henceforth as they have been used or to recur to the electro-magnetic breaking; also to the application of a mechanical lock very much resembling the lock of a gun, which has the object to supply very large galvanic batteries. By these means the galvanic battery has no other end but to open such lock, causing the connection between gearing and the endless screw fixed to the axle of the carriage.

The application of wedges introduced to insure and control the position of the driving spur wheel.

[Printed, 1*s.* Drawings.]

A.D. 1868, July 1.—N° 2103.

BROOKES, William.—(*A communication from Leon Hamar.*)—" Improvements in meters for measuring " water and other liquids."

1. The improvements relate to the application of paddles from a central wheel constructed in such manner that water running through the apparatus acts on the paddle, measuring quantities of liquid and driving gearing to indicate quantity measured.

2. The application of a flexible brass belt in the interior of the paddle chamber adjustable and serving to augment or diminish the inner space of that chamber.

3. To an air tight chamber for the wheelwork with the object of keeping out water from the register.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 1.—N° 2104.

SMITH, James Alexander. — (*Provisional protection refused.*) — " Improvements in photographic " apparatus."

For improvements in photographic apparatus designed to correct an imperfection and inaccuracy in the perspective foreshortening and proportions of photographic images or photograms, and also to correct an imperfection and defect in the actinic efficiency and homogenous purity of the colored rays proceeding from objects photographed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 1.—N° 2105.

CRAILSHEIM, Charles Frédéric.—" Improvements in bottles for effervescing liquids and in stoppers " for such bottles."

I construct my improved bottles with the ordinary orifice at the end of the neck and another orifice at the side. The orifice of the neck is provided with a metal stopper hinged to a metal ring secured on the neck. The said stopper is faced to fit the ring, and provided with an india rubber cushion to make it air tight, and when closed is secured by a catch fitting a socket in the ring. The side orifice is provided with a syphon tube and cock. When poured from the first orifice the liquid will be moderately effervescent, but when drawn from the syphon it will be in a foaming or frothing condition.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 2.—N° 2106.

TAYLOR, Alfred.—(*Provisional protection only.*)—" Certain improvements in neck ties or cravats, and in " fasteners for the same, and which fastener may be used as a fastening in combination with shirts and " shirt collars."

The novelty of this invention consists in the arrangement of neck ties and cravats that the ends may be secured together when in use by a metal or other stud, and which stud may also be made the means of securing or holding together the collar of the shirt and detachable collar, thus rendering buttons and cravat pins unnecessary.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2107.

ALEXANDER, Andrew.—(*Provisional protection only.*)—" Improvements in carriages and locomotive " engines for working on steep inclines and sharp curves, but some of them applicable to locomotive engines " generally."

Application and construction of a scraper to rollers, also of cheeks and rollers of a porous material or otherwise admitting of the passage of a lubricant. Also of the die or compression chamber of adjustable rollers and plates of metal or other material, or wholly in one or more pieces of blue lias clay, Ransome's patent stone, &c.; also of travelling cutter or divider, acting without stopping expressing action. Also of mechanical arrangement for carrying the clay and regulating motion of cutting wheel and passage of clay.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, July 2.—N° 2112.

POYNTER, John Edgar, and PATTERSON, Thomas Law.—(*Provisional protection only.*)—“Improvements in obtaining or manufacturing saltpetre, iodine, and bromine.”

This invention consists in obtaining saltpetre by adding nitrate of soda to the lixivium from kelp or seaweed residues; and in treating the mother liquor (after removing the saltpetre) with vitriol for the purpose of decomposing the sulphur compounds and of subsequently obtaining the iodine and bromine by precipitation and otherwise.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2113.

SCOTT, Edward John.—“Improvements in ornamenting boots and shoes.”

The invention consists in printing in oil, varnish, or other washable pigment on the leather used for making the uppers or other ornamentable parts of boots and shoes ornamental devices composed of dots or short strokes imitating stitches.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2114.

PAVEY, Frederick Archiabald.—(*Provisional protection only.*)—“An improved marking board for billiards, bagatelle, and other games requiring to be scored.”

The novelty of this invention consists in making marking boards with rotating discs having figures painted thereon, so as to mark units, tens, hundreds, and one thousand and upwards. The discs are so constructed that they cannot be moved backwards, and at each movement a click or bell sounds.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2115.

HALL, Dennis.—“Improvements in the construction of furnaces, and in apparatus for supplying them with fuel.”

The novelty in this case consists in forming furnaces with a number of apertures one above another in the point where the door is usually placed, and fitting the same with closing plates made to traverse the apertures and push the fuel into the fire or furnaces. The push-plates serve the double purpose of doors and fuel-feeders.

[Printed, 1*s.* Drawings.]

A.D. 1868, July 2.—N° 2116.

GREGSON, John Brumwell.—(*Provisional protection only.*)—“An improved production of sulphate of lead to be used as a pigment or for other purposes.”

In this invention a sulphate of lead possessing what painters term “body” is obtained by decomposing a solution of chloride or muriate of lead by means of a solution either of sulphate of soda, or of sulphate of magnesia, or of sulphate of iron, or by means of a mixture of sulphate of soda and sulphate of magnesia in solution.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 2.—N° 2117.

PAVY, Eugene.—“Improvements in treating and preparing certain vegetable and animal fibres to manufacture a new description of fabric or stuff applicable to various useful and decorative purposes.”

This relates to certain processes of treating certain vegetable and animal fibres in order to produce pulp and to manufacture therefrom a felted paper fabric or stuff applicable to various purposes.

The vegetable matters employed are plants of the nettle, corchorus, and other tribes; the barks of the mulberry tree and others, crotolarias and others, saccharine plants, flaxes, hemps, cottons, and in general all plants of a sufficiently felty texture to be employed either alone or mixed in this manufacture.

The animal matters are wool, silk, bulls' pizzles, skins, and others.

Minerals are also employed, viz., powdered gold, silver, mica, or others mixed with the pulp in the trough to produce sparkling effects.

Lixiviation or lye-washing can be accomplished in two ways. Operating on matters easily disintegrated vash them with milk of lime or preferably caustic alkali at 2° or 3° Beaumé, under a pressure of steam from 3 to 4 atmospheres for 3 hours; then pass them through the washing trough until the parts are luced to lengths of from $\frac{1}{12}$th to $\frac{1}{5}$th of an inch, and then bleach them in the bleaching trough as rags are ated.

Hard matters difficult to disintegrate are submitted in a close vessel to a pressure of steam of from 6 to 8 nospheres for 4 hours, employing preferably a solution of caustic soda at from 6° to 8° Beaumé, when the tters will be ready for bleaching. This mode having disadvantages, I prefer washing in milk of lime or lk alkali, and proceeding afterwards as follows:—The matters are submitted to the action of gaseous prine, when they assume a bright yellow red color; then subjected to the washing and bleaching ighs, when after a thorough washing for 2 cwt. of pulp $2\frac{1}{2}$ to 5 gallons of caustic alkali at 4° Beaumé are red into the trough. This second washing or lye which may be hot or cold rapidly causes perfect ntegration, and the operation is completed by thorough washing, and by pouring into the trough when water becomes clear about $\frac{1}{4}$ pint of sulphuric acid. From 3 to 6 pails of chloride of lime or soda at 4° iumé for 2 cwt. of pulp are now poured in the trough, and when the matter is nearly white it is washed a e and about 2 lbs. of crystals of soda and a like quantity of sulphate of alumina are added to the trough; bleaching is terminated by pouring $\frac{1}{4}$ pint of sulphuric acid into the trough, and by washing the matter e more. The same bleaching process is employed after the two first modes of lye washing described.

nother method of bleaching matters which will not bleach after washing in milk of lime or alkali or in pride of lime at 4° is as follows:—After having thrown into them $\frac{1}{2}$ pint of sulphuric acid they are nediately washed, and from $2\frac{1}{2}$ to 5 gallons of caustic soda are poured into the trough to decompose the nmy resinous matters which prevent the bleaching; when the liquid has become black it is washed in and bleaching as before described is recommenced. This last process effects the bleaching by an ficial action of gas.

Bulls' pizzles and skins as well as wool and silk are bleached by sulphur vapors.

The matters are now reduced or triturated by beating engines or otherwise, care being taken that the ments be kept to a length of from $\frac{1}{20}$th to $\frac{1}{5}$th of an inch. The matters are of course selected in relation he purpose for which the manufactured felted fabric is intended.

he felts are mostly colored or dyed in the troughs, and are rendered non-flammable there also when ired.

Vhen great suppleness is required from about 2 to 6 lbs. of white palm or other soap for 200 lbs. of pulp poured into the finishing trough before the pulp descends in the vessels.

he felted fabrics are applicable to a great number of uses, more especially for clothing, upholstery, and nting.

[Printed, *6d.* No Drawings.]

A.D. 1868, July 2.—N° 2118.

NDER, DAVID.—(*Provisional protection only.*)—"Improvements in thrashing machines."

This invention consists essentially in forming the beaters of the stripping drum of thrashing machines h four or other number of rows of nearly radial tapered stripping pins or teeth attached to longitudinal s secured across the whole length of the drum, which pins, at their respective distances apart, revolve or rk up into corresponding tapered circumferentially curved grooves formed on a movable segmental iron t of the casing of the drum near the feeding rollers, capable of being regulated and fixed at a proper tance from the drum, so that the stripping teeth will carry the heads of the corn or crop to be thrashed or ipped into the grooves as fed in through the rollers, and rub and strip off the grain or seeds against the les and bottoms of the grooves made with radially ridged or undulating surfaces and edges, and circumentially serrated respectively for that purpose, which by the velocity of the drum and rubbing action of e teeth and grooves strips off the grain completely before the heads are carried past the segment of ooves, and the stalks or straw is thrown on to any of the usual removing carriers.

[Printed, *4d.* No Drawings.]

A.D. 1868, July 2.—N° 2119.

LARK, ALEXANDER MELVILLE.—(*A communication from Paul Baudet.*)—"Improvements in barometers and other pressure indicators."

The invention consists in providing a means of indicating at all times the tendency to rise or fall of the rometer or pressure guage consequent on the increase and decrease of pressure.

According to one mode I apply a small spring blade on the index hand, one end of which spring rests on e dial, and as the hand moves one way or the other so is the spring inclined in one or other direction, thus fording a clear indication of the tendency to rise or fall.

In a modified arrangement the hand of the barometer has an index jointed to it, the motion of which is limited by stops. When the hand moves in one direction it carries with it the index above mentioned, the lower end being received in a recess made in the boss of the barometer spindle so as to hold it in an inclined position to the hand. The reverse effect is produced when the hand moves in the contrary direction. According to another arrangement I mount the extra index loose on the spindle of the barometer, and provide pins for moving the index in one or other direction by means of the hand which is placed between them.

The improvements are applicable to aneroid and other barometers and pressure guages of all kinds.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, July 2.—N° 2120.

CLARK, Alexander Melville. — (*A communication from Julien Hyacinthe Joseph Bayart.*) — "Improvements in the treatment or preparation of flax, hemp, jute, and other fibrous matters for spinning purposes, and in apparatus for the same."

I manufacture threads of all sizes from short stapled flax, hemp, jute, and other raw fibres, such as the refuse resulting from the stripping or carding of these matters. I first pass the fibres through a mill or devil, such as shown in the accompanying drawing, provided with a brush or doffer for separating the long fibres. The fibres are then washed to remove the gummy matters, bleached or dyed, again passed through the above apparatus for opening the fibres, and the length of the fibres equalized. The fibres are next passed through a drawing frame provided with a cleaning brush, and then through a roving frame such as used in preparing cotton. The fibres thus prepared may be spun in the usual way.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, July 2.—N° 2121.

ROBERTSON, Arthur Floyd.—(*A communication from Burgess Long.*)—" Improvements in carts."

The improvements relate to devices for elevating the forward end of a laden cart when descending an incline in order to relieve the back of the beast by throwing more of the load upon and back of the axle, and also to devices by which such apparatus is made to act in unison with a brake upon the wheels.

[Printed, 10*d*. Drawings.]

A.D. 1868, July 2.—N° 2122.

JOHNSON, John Henry.—(*A communication from François Lebacq.*)—" Improvements in shoes for horses and other animals, and in the method of securing the same to the hoof."

This invention consists in fastening the shoes of horses to their feet by means of an adhesive material.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 2.—N° 2123.

JOHNSON, John Henry.—(*A communication from Rufus Spaulding Merrill.*)—" Improvements in the construction of bridges."

This invention relates to a method of constructing bridges whereby the temporary framework or scaffolding ordinarily employed to support the main structure during the progress of the work is dispensed with, and consists mainly in the use of two or more levers projecting from the opposite sides of the space to be spanned and meeting in the centre, each lever being composed of a series of superposed layers, and each layer extending a certain distance in advance of the one immediately below, thus increasing by so much the projection of the lever.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 3.—N° 2124.

ROUSSEL, Charles.—" Improvements in machinery or apparatus for spinning, doubling, and twisting fibrous substances."

This invention consists in a frame for spinning and twisting fibrous materials in a continuous manner.

This frame consists of a framework on which are arranged the four principal parts of the mechanism, as follows :—

Firstly. A beam and a roller on which the rovings coming from the cards are wound. Secondly, two pairs of drawing cylinders. Thirdly, a mechanism for drawing and twisting simultaneously, consisting of two tubes turning one in the other on a vertical axis; the outer tube carries at its upper part two horizontal rollers turning on a horizontal axis. Fourthly, a second mechanism for simultaneously drawing and twisting, consisting of a tube and a rod turning concentrically on a vertical axis. The rod in the interior carries a al plate giving motion to a vertical disc, on the arbor of which is a bobbin, the spindle of which is n a fork above the outer tube. The action of the mechanism is as follows :—

oller unrolled by the beam delivers the roving to the first drawing cylinder fluted or not, and then to simultaneous drawing and twisting mechanism. The thread is taken up by the horizontal rollers aw and twist it by the double horizontal and vertical motion. It passes through the interior tube ound on the spool of the second mechanism, where it is again drawn and twisted.

ans of gearing and pullies the drawing and twisting can be increased and diminished at will. The an be doubled or a double twist be made by substituting for the first drawing and twisting m a spool carrying the thread.

same manner the direction of the twist can be changed at will.

ed, 1s. 4d. Drawings.],

A.D. 1868, July 3.—N° 2125.

ANDREW.—(*Provisional protection only.*)—" Improvements in apparatus to be used for the acture of tobacco pipes."

ature of novelty which constitutes this invention is the arrangement and construction of moulds the whole pipe can be moulded and the bore of the "staple" formed at one operation ready for the

ed, 4d. No Drawings.]

A.D. 1868, July 3.—N° 2126.

ON, JOHN HENRY.—(*A communication from the Incorporated Company "Debré and Grange," and gnier.*)—" Improvements in machinery or apparatus for the manufacture of paper pulp."

nvention consists in employing in the vat containing the pulp and in proximity to the cylinder y employed an additional apparatus to feed the pulp between the teeth or blades of the cylinder and the block in lieu of causing the cylinder itself to agitate and thus effect the supply of the pulp as perate its trituration as in the ordinary manner.

ed, 8d. Drawing.]

A.D. 1868, July 3.—N° 2127.

TT, GEORGE, and WOODCOCK, JAMES.—" Certain improvements in the method of and means ecting communication between guards, passengers, and engine drivers on railways."

ovelty of the invention consists in the application, adaptation, and use of the power derived from on or revolution of the wheels of each carriage, van, truck, engine, or tender for the purpose of g a revolving fan to create a current of air which may be applied to sound a whistle or other alarum he carriage from which the communication is desired.

ed, 8d. Drawing.]

A.D. 1868, July 3.—N° 2128.

JOSEPH.—(*Provisional protection only.*)—" Improvements in the working of locomotive s."

ovelty consists,—

employment of an air valve in communication with each steam chest for supplying air to the d cylinders when the pistons and slide valves are working with the steam shut off.

ed, 4d. No Drawings.]

A.D. 1868, July 3.—N° 2129.

N, JOHN BORLASE.—" Improvements in furnaces for calcining ores and other mineral nces."

e furnace and an open furnace are combined in one by converting the space between the two arches e furnace into an open furnace, the top of the lower arch being made level for the purpose; the between the arches is increased and the lower arch strengthened if necessary. The ore is supplied en furnace and afterwards descends into the space which forms the close furnace below the lower

ed, 8d. Drawing.]

A.D. 1868, July 3.—N° 2130.

ON, WILLIAM EDWARD.—(*A communication from William Farr Goodwin.*)—" Improvements in aton toys."

The invention consists of a walking figure or toy in which when drawn forward over the ground the legs and feet will move forwards and backwards in imitation of a man walking.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 3.—N° 2131.

HENRY, Michael.—(*A communication from Emile Peltier and Albert Paillard.*)—" Improvements in the " manufacture and construction of receptacles for preserves and other provisions."

The object of this invention is the manufacture of boxes, vessels, or receptacles for containing jams, preserves, and other provisions to be preserved from atmospheric influences.

The receptacle is made of tin, tin plate, or other metal, on which a varnish or coating is directly applied and fixed by heat or otherwise, thereby preserving the metal from oxidation and the contents from discoloration and injury. Various varnishes or coatings may be used, but the one preferred consists of gum copal, linseed oil, and essence of turpentine.

In the bottom of the receptacle is one or more orifices through which the jam or other provision is inserted, and when filled the hole is closed by a cap which may be provided beforehand with solder or cement, so as to fasten it instantly by a soldering iron. The cover overlaps the rim, and its flange or lip drops over a neck or recessed part of the receptacle, and a ring or guard is placed round it of sufficient length to facilitate its removal when the box is to be opened.

The bottom is first convex on the outside, and when the contents of the receptacle are poured in hot they shrink as they cool, producing a vacuum inside the receptacle, and the bottom is pressed inward by the atmospheric pressure against the contents which it packs tightly.

[Printed, 6*d.* Drawing.]

A.D. 1868, July 4.—N° 2132.

MULLER, Jan Anthony.—" An improved meter for regulating and registering the flow of liquids and " gases."

This invention consists of a cylindrical vessel in which works a piston or diaphragm, the said piston or diaphragm acting on tappets in communication with slides or valves for regulating the admission of the liquid or gas into the cylinder.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 4.—N° 2133.

HEAD, Jeremiah.—" Improvements in furnace grates and apparatus or appliances to be used therewith."

An improved step grate which can be run in and out of the furnace at pleasure upon wheels supplied for the purpose.

The bars are made to move somewhat after the manner of a Venetian blind whilst being opened and closed, and by this movement the fuel is gradually moved whilst burning to the lower end of the furnace.

[Printed, 10*d.* Drawing.]

A.D. 1868, July 4.—N° 2134.

FRYER, Alfred.— " Improvements in the concentration and treatment of saccharine and saline solutions, " and in apparatus employed therein."

The gases or products of combustion from a furnace are brought into direct contact with the solutions, or in case of some saccharine matters the heated carbonic acid gas given off by limestone during roasting is brought into direct contact therewith. Several modes and arrangements are described for bringing the gases into direct contact. For beetroot juice limestone is placed in the furnace or flue and the evolved carbonic acid mixed with the products of combustion is brought into contact with the juice so as to neutralise the alkali therein.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 4.—N° 2135.

ALBINI, Augusto.—" Improvements in mariners' or ships' compasses."

This invention consists in so constructing mariners' or ships' compasses as to make them capable of registering at short intervals the course steered by the ship. Under the suspended compass card a metallic ring is fixed, the said ring being provided on its under side with letters, figures, or signs, to indicate the compass points and to act as printing types. By means of clockwork a piston or rod is made to rise and fall at fixed intervals. On its descent it depresses the ring described, and causes the types on its under side in the direction of the ship's head to press a moistened silk tape and chemically prepared paper slip upon a cushion, and thereby to mark or print on the paper slip the letter or sign on the ring at the point of contact ich letter or sign corresponds to the course followed by the ship, as the sliding piston or rod is constantly inting in the direction of the ship's head. The descent of the sliding piston or rod also causes a point to ike and mark the paper and thus to indicate the centre of the ship's course printed on the paper slip. On e rising of the piston or rod after the impression has been made a fresh part of the paper slip is brought der the ring ready to receive the next impression.

[Printed, 2*s*. Drawings.]

A.D. 1868, July 4.—N° 2136.

IcNIEL, Andrew, and WHEATON, William.—(*Provisional protection only.*)—" An improved process for the manufacture of salts of ammonia from ammoniacal gas liquor."

Sulphate of lime or gypsum is mixed with the ammoniacal waters obtained from gas works, and after eeping from two to three weeks the liquid is drawn off and evaporated to dryness and a powder rich in lphate of ammonia will be obtained.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 4.—N° 2137.

EWBY, Edwin Henry.—(*A communication from Anthony Leonard Fleury.*)—" Improvements in reducing aluminium from its ores or earths, and in producing alloys therefrom."

According to this invention pure alumina, such as appears in nature or is artificially formed, is intimately ixed with hydrocarbon, such as gas-tar, rosin, petroleum, or any other analogous substance so as to produce stiff paste, which when dry in the form of balls or in small pieces is charged in a retort or tube, and heat s applied thereto. While at a cherry red heat, hydrocarbon gas is injected by a force pump into the tube r retort at a pressure of 25 to 30 pounds to the inch, and this pressure is maintained during the reduction. When cool the retort is opened, and the product remelted in a covered crucible, and metallic zinc may be dded to facilitate the reduction, which zinc may afterwards be driven off by heat, leaving the pure aluminium n the crucible.

To produce aluminium alloys the respective metallic oxides can be mixed with the gas tar and the whole eated together and reduced; or the previously prepared spongy aluminium may be conveyed to the bottom f the furnace containing copper or other metal. This is accomplished by means of a perforated ladle, hrough which the aluminium passes and rises to the top of the heavier metal.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 4.—N° 2138.

EEDHAM, Richard.—(*Provisional protection only.*)—" An improved fuel economizer and feed-water heater."

The apparatus consists of a vessel formed of two chambers connected together by means of a number of ubes and arranged so as to rotate either in a vertical or horizontal position. This apparatus is placed in the ue between the boiler and the chimney and rotates on hollow trunnions, through one of which the feed ter is introduced passing through the other to the boiler after being forced through the tubes and thus coming heated on its way.

When the vessel is arranged to rotate in a horizontal position the rotation is produced by means of any am that may be generated acting on an Archimedian screw and by the force of the water as it enters or it y be produced by mechanism.

When the vessel is arranged to rotate on a vertical axis the rotation is produced by mechanism.

he tubes are provided with scrapers in the form of longitudinal blades or of a perforated plate which are ated by mechanism, but when the machine rotates on a horizontal axis and blades are used they may ctuated by weights.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 4.—N° 2139.

SSENGER, Thomas Goode.—" Improvements in the construction and erection of buildings used for orticultural or other similar purposes, and in machinery or apparatus employed therein."

My invention consists first in the construction and arrangement of a number of glazed lights which are d on one or more sides of a conservatory or other building for horticultural or other similar purposes and ng in such manner that the whole or any number of them on the same side may be opened at one and the ne time and to any required distance.

These lights may run the entire length of the building, and may open from one end to the other end thereof admit fresh air into every portion of the building in small or large quantities. This construction and arrangement will produce novel effects. When I make the structure of narrow lights I am able to give the outline almost any shape and a graceful and ornamental appearance. Amongst the advantages of this invention are these :—(1.) The buildings may be erected in any form and without the use of bent glass. (2.) Their extreme lightness of construction combined with strength and durability. (3.) Plants may be exposed to the atmosphere when desired or pure air admitted in any required quantity and at many points, thus giving complete ventilation. (4.) Variety of design is attainable at small cost. The building may be glazed with or without employing putty.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 4.—Nº 2140.

CLARK, Alexander Melville.—(*A communication from François Jean Guillaume Gobin, alias Dodé.*) —" An improved fastening for boots, shoes, and other articles."

The fastening is composed of a hook and button or stud combined, which are arranged along each side of the opening in the article to be secured. A lace is then passed alternately round the hooks on each side and secured by tyeing.

The hook is formed of metal or other material, and is provided with a stem to be inserted in the article, and then rivetted so as to secure it thereto, forming a button head.

The fastening is applicable to boots, shoes, articles of dress, bags, and otherwise.

[Printed, 8*d*. Drawings.]

A.D. 1868, July 4.—Nº 2141.

SLATER, George.—(*Provisional protection only.*)—" An improved machine for plaiting or doubling strips " or sheets of cloth, paper, and other materials."

My invention relates to a machine for plaiting or folding strips of linen, cotton, or other fabric to form tucks or flounces for ladies' skirts and other articles of clothing. I employ smooth or plain cylindrical pressing rollers or a single plain roller arranged in combination with a vibrating or reciprocating folding bar or plate. The rollers are heated by gas or otherwise. The end of the strip to be plaited is inserted between the rollers which draw or feed it forward. The said strip as it is drawn between the rollers passes under the folding bar whose edge lies upon the lower roller or upon a table. The said bar is caused to vibrate over the surface of the roller or table by means of a crank or eccentric geared in connection with the roller, and at each vibration it forms a plait or fold, which is instantly carried forward and compressed between the rollers. The machine may be provided with a driving pulley and driven by a steam engine, or may be operated by hand or other power.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 6.—Nº 2142.

KILNER, James, OCLEE, Frederick Henry, and BURNS, Edward.—(*Provisional protection refused.*) —" An improved cork drawer."

Consists of an instrument with a bent point to be passed between the cork and the neck of the bottle so as to bring the bent part below the cork, and by withdrawing the instrument the cork comes with it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 6.—Nº 2143.

JENSEN, Peter.—(*A communication from Heinrich Pollack and Albert Edwin Schmidt.*)—" Improvements " in sewing machines."

The employment of toothwheelgearing for obtaining a righthanded spoolhook, the flywheel having a toothwheel (of soft metal) fixed to it gears into two pinions (of hard gutta percha; one works the spoolhookspindle which carries a double eccentric for the feed; the other works the needlebar by a slot crank. The upright pillar carrying the bobbin is at its lower end screwed into the frame and carries a loose ferrule which carries the bobbin; a dishshaped washer on the top of this ferrule receives a spring which at its upper end abuts against the regulating nut on the spindle. Thus the spindle can be removed and a new bobbin fitted without disturbing the spring and its tension. The stitchregulator is a lever which can be made to press the feedbar more or less away from its eccentric. The needle is straight and as well as its socket formed alike and of a circular section except for about ¼ of its periphery which is flat. The needle bottoms in its socket. The bobbin filler is in the frame of the machine, and is worked by an indian rubber roller pressing against the flywheel; its spindle for the purpose of drawing it in and out of gear has two grooves turned in it with the space between turned a gentle slope towards each to allow the spring (which may be a straight piece of steelwire supported at each end and pressing with its middle part against the spindle) to ide into one or other of the grooves. The form of this machine because of its axially straight and circumrentially round arm through which the needle bar spindle passes is such as to afford facility for taking hold f the machine.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 6.—N° 2144.

RYER, ALFRED.—"Improvemnts in the mode of treating for evaporating and concentrating purposes " cane juice, beetroot juice, and other saccharine and other solutions and liquids, and in the construction of " apparatus for the concentration of saccharine and other solutions and for the evaporation of liquids."

This has partly reference to the inventor's former Patent, dated 14th February 1865. The revolving cylinder in the old apparatus has for a stated purpose its curved blades placed at from ⅝ths to ⅛th of an inch apart, that is to say, as closely together as can be done without interfering with the flow of the liquor. The saddles which have been used with the range of trays are made of reduced height, not more than 1½ inches above the top edge of the tray, so that the scum can flow freely. The revolving cylinder is placed at the side of and on a lower level than the trays, and a tube is used to convey heated air from the air heater to the cylinder. The part of the air tube adjoining the cylinder is for reasons described made of cast instead of wrought iron; and to provide for expansion an expansion joint is introduced into this tube. To avoid pening a door in the air tube to inspect the cylinder a lantern is employed which throws light into the ylinder; a peep-hole is also used. The supports of the air tube and the supports of one end of the cylinder re attached to a single sole plate, while the supports of the other end of the cylinder and those of the fixed termediate piece of the fan of the engine and of the gearing driving the cylinder are attached to another le plate. The two sole plates are kept apart by tie rods. To adjust the face of the air tube and the face the intermediate piece to the face of the cylinder each of the former is placed on two pillars having justing screws, they have besides brackets with a tie rod and adjusting nuts to fix them apart. A funnel brought out of the side of the air tube, and is caused to deliver the substance operated on into a gutter tside the cylinder, along which it flows back into the other end of the cylinder; this is useful when it is sired to make sugar in crystals. Trays for submitting shallow streams of saccharine solutions to fire or oducts of combustion are made of malleable cast iron, which is more durable and less liable to fracture an the cast iron hitherto employed. To make a cast iron tray less liable to fracture the inventor casts the ttom by itself and attaches the sides afterwards. Thin wrought iron trays have sometimes been used but e liable to warp, the inventor therefore strengthens them by one or more strong trays, or he makes the ys thicker, say not less than ⅜ths of an inch. To stiffen the wrought iron trays the inventor makes the bs or baffles deeper and thicker than usual, say not less than 1¾ inches deep and thicker than ⅜ths; and sometimes makes the ribs of steel. He employs steam or vapor at or below 212° to heat one side of y division or diaphragm, and air is made to pass over the other side; the air is thus heated and is then plied to evaporate or concentrate by bringing it into immediate contact with the liquid. The inventor so aces the boiler of the furnace used both for raising steam and concentrating saccharine solutions that the oducts of combustion act first upon the boiler and then pass away to concentrate the solutions. In conructing furnaces for burning megass as fuel for concentrating saccharine solutions the inventor makes a elf on which the megass when damp is partly dried before falling on the hearth to be burnt; or a drying amber is made heated by the waste products or by radiated heat, the megass when dryed passing directly erefrom into the furnace; or the megass is placed in a revolving or reciprocating chamber through which eated air or gas is passed, or in a chamber provided with agitating arms; or a series of shelves is made, om one to another of which the megass falls, while being acted upon by heated air and gases.

[Printed, 6*d*. No Drawings.]

A.D. 1868, July 6.—N° 2145.

DAVIES, GEORGE.—(*A communication from Meliton Martin.*)—"Improvements in locomotive engines."

This invention consists in the direct application to locomotives of one or more rotary engines, giving motion to one or more pairs of horizontal wheels, which pressing against a central rail enable the train to travel over heavy gradients. The machinery may be composed of a rotary steam engine, two shafts and two horizontal wheels, and the frames, screws, and springs to produce any required amount of pressure on the central rail. This apparatus can be placed either on the locomotive or on its tender.

[Printed, 3*s*. 10*d*. Drawings.]

A.D. 1868, July 6.—N° 2146.

WALDENSTRŎM, ERIC HUGO.—"An improved arrangement of mechanism to be employed for manu" facturing metallic rivets or articles of a similar description."

The improvements are designed for the purpose of manufacturing from cold bars or rods of metal rivets, small bolt blanks, or articles of a similar description to be employed as fastenings. The arrangement and construction of the several parts composing the machine may be thus described :—The metal rod or coil of wire of which the rivets or other similar fasteners are to be made is fed into the machine in a heated or cold state by a peculiar arrangement of apparatus which is constructed so as to feed different lengths of metal bar according to the length of rivet under manufacture, and consists in a pair of jaws having a gripping motion, a second backward and forward motion for feeding being given to the same through the medium of mechanism actuating the die. A retaining or second gripping motion is employed to prevent the metal bar fed in being carried back by the feeding slide when receeding. The front of the bracket supporting the feed motion is provided with a sliding heading block, in which is inserted a tube for receiving the blank. The termination of the channel through which the bar of metal is guided into the tube is provided with a cutter as also is the entrance to the tube, so that when the heading block receives a lateral motion by means of a cam its first movement severs the blank contained within the tube from the continuous length of bar which as the movement continues is carried opposite the centre of the die; during this operation the die for forming the shank has been moved forward by means of a cam on the driving shaft into position for receiving the blank, which is effected by an injector actuated by a cam also on the driving shaft. The injector leaves the blank in the die of a length nearly equal to the length of shank required upon the rivet or bolt, rather more than a sufficient length of metal being left projecting from the die for the formation of the head; after this is effected the die containing the blank continues its dwell whilst the heading block is returning to its first position, in which situation a level or slightly nipped or recessed surface is left opposite the die containing the blank; at this time the cam actuating such die moves forward so as to compress the protruding piece of blank forcibly against the level or recessed cup in the heading block, effecting by such compression the required head upon the rivet or bolt under operation. The die now receding is caused to eject the finished rivet.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, July 6.—N° 2147.

WHITEHEAD, James Heywood. — "Improvements in numnahs or saddle pads and in numnah "blankets."

This Provisional Specification describes making numnahs or saddle pads of wool or other felting fibre felted upon an open fabric or net made of linen, woven horse hair, or other material.

Numnah blankets made by forming a felt on a woven horse hair fabric are also described.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 7.—N° 2148.

DAVIES, George.—(*A communication from Adolphe Jean James d'Andiran and Gustave Wegelin.*)—"Improvements in dyeing."

This invention consists, firstly, in dyeing unspun vegetable fibres by means of extract of madder with or without the admixture of other coloring matters.

Secondly, in dyeing yarn or fabrics of vegetable fibre printed or otherwise, this effect being produced by madder or its derivatives conjointly with certain other coloring matters.

Thirdly, in the preliminary dyeing by means of extract of madder, or madder itself, or other derivatives thereof, of vegetable fibres intended to be mixed by spinning, weaving, or otherwise with fibres of animal origin.

[Printed, 6*d.* No Drawings.]

A.D. 1868, July 7.—N° 2149.

THOMSON, James.—(*Provisional protection only.*)—" Improvements in chimney tops and ventilators."

The upper end of chimney tops is closed and apertures preferably round and say 1½ inches in diameter are made in the sides. The combined areas of these apertures should be say three times the sectional area of the chimney top. A gust of wind striking horizontally enters the "top" by the apertures at one side and issues by those opposite, while a gust striking at an angle strikes against the surfaces round the apertures and is thereby deflected at the same angle and issues by apertures corresponding with that angle. With zinc or other tops of insufficient thickness for the purpose of this invention the apertures are punched so that a flange is formed all round them inside.

For ventilators the apertures are made considerably smaller, so that the air or wind entering through them becomes divided and therefore cooled; it then descends by its own gravity to the apartment to be ventilated.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 7.—N° 2150.

SON, George Rowe.—" Improvements in stereotype plates."

he said invention relates to stereotypes formed of vulcanized india rubber or gutta percha, or a compound th substances, and consists chiefly in the novel modes or processes employed to produce the impressions upon the india rubber or other material. The said impressions are produced either upon the finished anized sheets or in the soft compound of which such sheets are formed, the curing or vulcanizing being e latter case afterwards effected by the usual means. The rubber or other material and the matrix are ped together and subjected to heat. After cooling the vulcanized plate is removed from the matrix and dy for use.

Printed, 4d. No Drawings.]

A.D. 1868, July 7.—N° 2151.

YALL, Thomas Jefferson.—" Improvements in the manufacture of india-rubber soles for boots and oes."

y invention relates to the manufacture of sheets of vulcanized india rubber compounds for forming the of boots and shoes. The surface of the vulcanized sheet which is to form the inside of the soles is orarily covered with some woven fabric, which is removed when the said sheets are used. The other ce of the sheet which is to form the outside or bottom of the sole is roughened by producing upon pattern or impression, such impression being taken from a sheet of some fabric or substance of le texture.

rinted, 4d. No Drawings.]

A.D. 1868, July 7.—N° 2152.

PÉE, Evence.—" Improvements in the construction of coke furnaces."

arrangement of coke ovens grouped in twos or threes, the gases of combustion of which serve to heat ne the other, and afterwards to heat a steam boiler.

rinted, 10d. Drawing.]

A.D. 1868, July 7.—N° 2153.

H, Ferdinand.—(*A communication from Conrad Bek and Heinreich Bek.*)—(*Provisional protection*)—" Improvements in the treatment of straps or bands for driving machinery."

is invention consists in coating straps or bands with a mixture of oil, grease of skins, creosote, and uric acid.

rinted, 4d. No Drawings.]

A.D. 1868, July 7.—N° 2154.

SON, John, and FITTON, Edward Gerrard. — " Improvements in machines for hackling, nbing, cleaning, preparing, and spinning flax, tow, jute, hemp, and other fibrous substances."

is Provisional Specification describes an improvement in hackling machines which consists in running heets over three shafts instead of two as heretofore, and also in applying a stripping motion to the s or hackle. It also describes an improvement in combing machines, which consists in using one ore rotary nippers mounted on discs in combination with an ordinary head of spiral or screw gills and s; also an improvement in machines for cleaning tow and other matters, which consists in a cylinder rows of teeth on its periphery working in a casing which swivels on pivots so that the cylinder and g can be placed at different angles; also an improvement in the collars and in the spindles and bobbin ng of roving frames; also in the collars and spindle rails of spinning frames, and in mechanism for ing the rove in and out, and in arrangements for driving the spindles of weft winding machines so as to the yarn at an equal speed from the spools; also in supporting the ends of the reels, beaters, or ers of thread polishing machines.

rinted, 2s. 6d. Drawings.]

A.D. 1868, July 7.—N° 2155.

MPTON, Thomas Russell. — " Improvements in constructing forts, fortifications, or other de- ces."

is Provisional Specification describes casting forts or defences in one piece or in blocks cast separately e position they are to occupy.

veral forms of forts or fortifications which may thus be formed by casting are also described.

rinted, 4d. No Drawings.]

A.D. 1868, July 7.—Nº 2156.

WALKER, Bernard Peard.—" Improvements in effecting the junctions of driving bands."

This invention consists in joining driving bands by means of metallic clips joined by a hinge in which clips the ends of the belts meet and are held secure. And also in joining driving bands by means of two metallic plates between which the ends of the bands are placed, and within which the bands are held secure.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 7.—Nº 2157.

PRICE, Astley Paston. —(*A communication from Eugène Pelouze and Lucien Dusart.*)—(*Provisional protection only.*)—" Improvements in the treatment of phosphates of lime, and in obtaining products " therefrom."

This invention consists in submitting bones, coprolites, animal charcoal, or other natural or artificial phosphates to the action of acids such as sulphuric, hydrochloric, or nitric acids, and precipitating from the soluble portion of the result of such decomposition what is known as bibasic phosphate of lime either by the addition of lime or of carbonate of lime, or of other calcareous compounds.

The bibasic phosphate of lime thus obtained is especially applicable for agricultural purposes, but it may also be employed for other purposes useful in the arts.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 7.—Nº 2158.

MORTON, George.—" Improvements in ornamenting fire-grates and fenders."

This invention consists in covering the arched beading or moulding of the arches of fire grates and the tops of fenders with a strip of perforated sheet brass or other metal or alloy, the appearance of the beading through the perforations in the said strip of sheet metal producing a highly ornamental effect.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 8.—Nº 2159.

MAYALL, Thomas Jefferson.—" Improvements in the manufacture of gas tubing and other articles of " india-rubber."

My invention relates to covering or coating the surface of india rubber tubing and other articles. The coating or lining for the interior surface of the tubes or other articles is composed of linseed oil, fine litharge or white lead, in the proportion of one quart of oil to one pound of litharge. To form the varnish for the outside of the tubes or other articles I mix one quart of linseed oil with one half pound of litharge, and add to the same about a gill of gold size. I prefer to make such tubing of a compound consisting of india rubber, zinc, pipe clay, gum, shellac, white resin, and sulphur. This compound should be subjected for about two hours to a temperature of two hundred and sixty degrees Fahrenheit. Any desired colouring matter may be mixed with the varnish for coating the exterior of the tubes or other articles, which may thus have imparted to them a highly ornamental or finished appearance.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 8.—Nº 2160.

MAYALL, Thomas Jefferson.—" Improvements in electric telegraph cables."

The conducting wire or wires of the cable may be of any ordinary kind and arrangement. I coat or cover these wires in the usual manner with india rubber or gutta percha, or both substances combined, or compounds of the same with other materials, and I then apply to the exterior of this coating a wrapper of cloth or woven fabric covered, or what is technically termed " frictioned," on both sides with a solution of the same substance or compound. For submarine cables I apply over the cloth wrapper my improved protective covering, which is prepared in the following manner :—Upon a sheet of cotton or other fabric I spread a layer of pure rubber dissolved with camphine or other solvent ; over this rubber I apply the vulcanizing substance or compound, which is then cured or vulcanized in the ordinary manner. I take one pound of para rubber, one pound of gutta percha, one pound of zinc, two pounds of pipe clay, one quarter of a pound of sulphur, and one half pound of shellac, one half pound of French chalk, and two ounces of white resin. This compound should be cured or vulcanized for about two and one half hours at a temperature of about two hundred and fifty degrees Fahrenheit. The cloth or fabric is then removed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 8.—N° 2161.

CHARLES DENTON.—(*A communication from Louis Larrüe.*)—(*Provisional protection only.*)—
ovements in ornamenting textile fabric, feathers, artificial flowers, and such like articles."
invention consists in the application of a metallic ornamentation to one or both sides of textile
such as lace, net, tulle, silk, velvet, as also to feathers, flowers, &c., by first painting or printing on
ric with an adhesive compound composed by preference of white lead or zinc white, linseed and fatty
d copal varnish, and then applying gold, silver, bronze, aluminium, or other metals thereto in the
either leaf, foil, or powder.
n applied to feathers, flowers, &c., the white lead or zinc white in the adhesive composition may be
ed with.
ited, 4*d*. No Drawings.]

A.D. 1868, July 8.—N° 2162.

AK, JOSEF.—(*Provisional protection only.*)—"Improvements in the construction of aeronautical
ratus."
culiar method of using a balloon indirectly as fulcrum of a lever acting as a kind of wing, and of
g the centrifugal power of the moving parts of the apparatus for the purpose of assisting the motion
apparatus in any desired direction, either vertical, horizontal, or inclined.
ated, 4*d*. No Drawings.]

A.D. 1868, July 8.—N° 2163.

E, JOHN FREDERIC.—(*Provisional protection only.*)—" Improvements in the manufacture of copying

this copying ink a facsimile of writing can be obtained by pressure of the paper written on against
of copying or other paper without the necessity of damping either sheet or of using a copying press
r. Is is so made also that much more writing can be done with it than with the same quantity of
y ink.
ited, 4*d*. No Drawings.]

A.D. 1868, July 8.—N° 2164.

, JOSEPH, and COPONET, GEORGE SPARCIATE.—" Improvements in printing machines."
new combination of mechanism which constitutes our invention consists of the cam, the two geer
for giving it motion, together with the clutch by means of which we can put our improved geer in
on at pleasure.
neans of our invention we can print alternate sheets and "double roll" the "forme," or we can
n the "impression" cylinder" and "feed board" inoperative during our pleasure, while if our
on be not put in operation the printing machine remains in its normal condition.
ited, 8*d*. Drawing.]

A.D. 1868, July 8.—N° 2165.

, JOHN, MATHER, WILLIAM, and DOHERTY, WILLIAM.—" Certain improvements in agricultural
ratus termed 'chaff cutters.'"
novelty of the invention consists in the novel employment and use of two or more "peg wheels" of
t sizes which are secured to and slide on the bottom feed roller spindle in contradistinction to the
only one "peg wheel" as now employed.
ited, 6*d*. Drawing.]

A.D. 1868, July 8.—N° 2166.

KES, WILLIAM.—(*A communication from Thomas Prosser.*)—(*Provisional protection only.*)—" Im-
ments in means or apparatus for evaporating and condensing liquids."
bject of the improvements is to facilitate evaporation and condensation.
his purpose the liquid to be evaporated is contained in a close receiver in the upper part of which is
series of chambers communicating with each other, and through which a heating medium, as steam,
er, air, or gas, is successively caused to flow, by which evaporation of the liquid in the receiver is
. The vapour obtained passes down a tube first into a chamber, which may be called a condenser,
nce into another chamber, which may be called the refrigerator, both contained in the receiver.
luid is supplied by the lower part of the receiver by a suitable channel, and the height of it therein
ated by a float acting on an escape valve. In like manner the height of the condensed liquid is
d.
loat and valve chambers are suitably connected with their respective main chambers.

The improvements are applicable not only generally to facilitate evaporation and condensation, but are particularly applicable to the production of fresh from salt water also to recuperate water from surface condensers and the making of sugar and salt in vacuum.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 8.—N° 2167.

LE BLANC, Armand Jules.—" Improvements in the manufacture of belts, bands, or ropes for the " transmission of power for driving machinery and for other purposes."

This invention primarily consists in the manufacture of belts, bands, or ropes by means of a fabric, by preference of cotton, coated with caoutchouc and rolled on and into one another; it is then submitted to a strong pressure to cause the caoutchouc to pass through and into the pores of the fabric, the material is subsequently coated with caoutchouc and vulcanized.

The invention further consists in the employment for the manufacture of belts, bands, or ropes of all kinds of woven tissues or textile fibres (woven or twisted) and impregnated with caoutchouc, gutta percha, or other gummy or resinous materials, thus giving to belts, bands, or ropes similar advantageous results that the present india rubber and vulcanized cotton fabric possess.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 8.—N° 2168.

COPPÉE, Evence.—" Improved apparatus for crushing and washing coal for the manufacture of coke or " artificial fuel."

The apparatus consists of two crushing mills interposed between which are two washing vessels provided with force pumps for forcing water up into and through the pulverized coal. Beyond the second mill are troughs or gutters along which the crushed and washed coal is carried to chambers where it is finally deposited.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, July 8.—N° 2169.

KERR, Thomas.—(*Provisional protection only.*)—" Improvements in fire-arms."

The feature of novelty which constitues this invention is the providing of a hollow socket which projects rerewards from the breech end of the barrel, the reremost end of the socket being made completely circular, whilst the intermediate part is cut away, leaving a semicircular cavity. Through the circular extremity a sliding breech piece passes which can be forced by the hand close against the end of the barrel and withdrawn therefrom with great rapidity.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 8.—N° 2170.

TASKER, William, the younger.—" Improvements in machinery or apparatus for elevating straw and other " produce."

This invention consists in a machine whereby the apparatus for elevating the straw and other produce and the machinery for working the same are combined in one implement. The framing of the carriage to which the elevator is attached, and also the framing of the elevator itself, may be constructed of angle or other shaped metal bars.

The invention further consists in attaching or forming in or underneath the elevator or frame of the elevator gear work or gearing to be worked by horses or other animals passing round or under such elevator giving motion to the same, and the two combined forming one machine.

The necessary power may be imparted thereto from any other motive power engine.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 9.—N° 2171.

ROUGET, Etienne.—" An improved mode of fixing on paper or other suitable surfaces drawings in " crayon, charcoal, blacklead, or other materials of a more or less friable nature."

The invention consists in fixing on paper, paste or card board, painters' canvass, or other suitable tissues, stone, slate, wood, metals, or other similar suitable surfaces drawings in crayons, charcoal, blacklead, or other pencil, chalk or other similar drawing materials, by directing on the said drawings any suitable adhesive liquid reduced into a spray or what is called the atomized state.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 9.—Nº 2172.

), Marcus.—"Certain improvements in apparatus for containing and delivering tickets or continuous ıs of paper or other similar materials."

ıovelty of the first part of the invention consists in so applying one or more india rubber surfaced r delivery rollers and in using them in combination with the interior surface of the lid of the box ng the strip or roll of consecutively numbered tickets that when the lid is securely closed it presses owl or bowls, and when the strip of tickets is between and the shaft of the roller is turned by a screw head, or lever the issue of the tickets is thereby effected from an aperture or slot in front of rs; a guide is also arranged to ensure the even issue and a stop plunger to hold the ticket when rn off.

dly, in the application of an intermittent movement to the said delivery rollers (the ticket guide described) by the use of spur and ratchet gearing actuated by a lever or handle.

ted, 8*d.* Drawing.]

A.D. 1868, July 9.—Nº 2173.

IELD, William.—"Improvements in looms for weaving."

invention relates to the "letting off" or beam motion and the "taking up" motion, and the im-ents consist in the production of a more uniform and even fabric than has hitherto been manufactured the combined action and the great precision with which the motion can be regulated.

connection of the "letting off" and "taking up" motion by an arrangement of gearing and change the two motions can be regulated so as to work in unison with each other, enabling the operator to regulate and adjust their relative speed, whereby a uniformity of pick and tension is effected that any class of fabric, from coarse to fine, to be produced with regularity and precision.

ated, 10*d.* Drawing.]

A.D. 1868, July 9.—Nº 2174.

DLER, James.—(*Provisional protection only.*)—"Improvements in apparatus for drawing and enting waste of water from pipes, mains, or other sources for domestic or other purposes."

stern without a division. Two valves instead of three. Means of adjustment. A smaller apparatus, pable of discharging the same quantity of water. Method of connecting the two valves. And tion of this principal to existing cisterns used for domestic or other purposes.

nted, 4*d.* No Drawings.]

A.D. 1868, July 9.—Nº 2175.

LL, Thomas Jefferson.—"Improvements in the treatment of india rubber, gutta percha, or pounds thereof, and in the manufacture of type and other articles therefrom for printing and other ."

invention relates to combining india rubber or gutta percha or india rubber and gutta percha, the percha being cleansed of its oil with sulphur washed of its acid and dried whiting, or white or black nd then subjecting the respective combinations to pressure in moulds and to heat progressively ing during several hours.

type or other forms the desired representations may be formed in or separately applied to the s.

hese impressions may be imparted by highly heated moulds or matrices applied to the surface of the al after hardening of the same.

separate type or portions may then be obtained by cutting up between the respective rows into slips, may then be grooved or cross cut to indicate the tops or bottoms of letters or signs; then the slips e cut crosswise by series of saws into separate letters or other parts.

inted, 4*d.* No Drawings.]

A.D. 1868, July 9.—Nº 2176.

SY, William.—"Improvements in machinery and apparatus for drying and otherwise treating grain other substances."

object of my invention is to keep up a good circulation of pure heated air at a moderate temperature h the grain whilst it is being gently agitated so as not to discolor the grain nor injure its germinative rties; this is the more readily effected by the manner in which the heated air is kept under control.

In that part of it which relates to the treating of straw, root, and green crops the object is three fold; viz.,—

To provide a cheap and nutritious food for horses and cattle that may be available at any part of the year.

To economize wheat and other straw, making it more digestible and bringing out its feeding qualities to the utmost extent.

To make roots of more value for feeding by ridding them of a portion of their water only, and whereby they are better preserved.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 9.—N° 2177.

HARRIS, John, and PENDRED, Vaughan.—"Improvements in the manufacture of wrought iron and "steel."

According to this invention blooms or balls of iron or steel are taken direct from the puddling furnace and welded to the number of two or more into one mass by the action of a steam hammer within a furnace called by preference a forging place. The iron being welded being exposed during the process to the action of flame or heat proceeding from a suitable furnace. The welded bloom is then withdrawn and dealt with in the ordinary way by hammering or rolling.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, July 9.—N° 2178.

MABSON, John.—(*Provisional protection only.*)—" Improvements in apparatus for propelling persons " in the water."

A flexible blade or surface of fish tail shape is connected by a beam to a belt passed round the waist; a cross beam is connected at its ends to the feet, and rods lead from the ends of the cross beam to the blade; the longitudinal beam is jointed midway between the blade and the cross beam. By striking out the feet alternately the blade vibrates on the joint and propels the person through the water.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 9.—N° 2179.

DOTY, Henry Harrison.—" Improvements in lamps for signalling and telegraphing at sea and on " railways, lighting ships, docks, railway carriages, and other similar purposes."

The invention consists of a lamp hollow for containing petroleum or other hydrocarbon on a stand and having an aperture in its centre for admission of air to the flame. A tube with a nozzle at its upper end passes up through the said aperture, and is in connection with an air pump by which a current of air is forced through the nozzle at the end of the air tube. Close to the orifice of the said nozzle is another nozzle fixed on a pipe in communication with the petroleum. The draught caused by the current of air creates a vacuum in the said pipe and draws the petroleum up the pipe, and ejecting it from the nozzle in the form of spray, which is ignited by the flame of an oil lamp on the said oil vessel. On a bracket around the oil vessel is a glass lantern supplied with a suitable covering; a reflector is placed over three sides of the said lantern, so that on turning the lantern quickly towards any object sharp brilliant flashes are perceived. In grooves on the lantern are placed colored pieces of glass, so that on turning any particular 'color towards a ship or other object signals can be transmitted with great facility.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 9.—N° 2180.

NUTTALL, Thomas.—(*A communication from Eugene Sullivan.*)—(*Provisional protection only.*)—"Improvements in the bearing surfaces of horse collars, riding and harness saddles, and similar articles."

The patentee covers the portion of the body of the collar or other part of the harness or saddle that comes in contact with the horse with a fabric whose exterior surface has been rendered waterproof by a coating composed of vulcanized caoutchouc, or gutta percha, or any other composition possessing a sufficient portion of the said gums to produce an elastic and durable waterproof coating on woven fabrics.

A very superior article is produced by the employment of a kersey or other elastic woven fabric after it has been rendered waterproof by the combination therewith of a coating of vulcanized caoutchouc or gutta percha, thereby forming a soft and durable bearing surface that will not under any circumstances gall or chafe the horse, and which may be cleaned with soap and water without impairing the softness and smoothness of the texture.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 9.—Nº 2181.

D, **William Rudd.**—"Improvements in the formation of steam and water tight joints in tubular
, surface condensers, and other such like apparatus in which tubes are employed."
'rovisional Specification describes making joints between tubes and plates by the application of
hort tubes of compressed paper. The holes in the plate are made larger than the tubes which are
d in them, and the rings of paper fit closely round the tubes where they enter the plate and fill up
ening space.
d, *6d.* Drawing.]

A.D. 1868, July 9.—Nº 2182.

, **Thomas.**—"Improvements in railways."
improvements consist, firstly, in dispensing with turntables by carrying the rails in curves from
to another. 2nd, in dispensing with chairs by using longitudinal or cross metallic sleepers with
d or rivetted thereon, or formed in the same piece. The longitudinal rails are united by flanges,
are applied to keep the rails the correct distance apart. 3rd, in causing the engine to put signals
ff. 4th, in providing locomotive engines with driving wheels before or behind the engine.
ed, *8d.* Drawing.]

A.D. 1868, July 9.—Nº 2183.

Alexander Melville.—(*A communication from Alphonse Goullioud.*)—"Improvements in
for weaving."
st improvement of this invention consists of a combined temple and "take up" composed of metal
keys provided with points at the one end for entering the fabric from below; these keys are caused
d fall by the aid of cams, and are divided into two series, one of which has a horizontal motion for
up" the fabric in addition to the rising and falling motion. Motion is imparted to the cam shaft
ys from the batten or shuttle driving mechanism in any suitable manner.
ove improvement is more particularly applicable to looms for weaving articles of irregular form,
tays and gaiters, where, as in the case of a stay gusset, for example, only those threads in which the
ads pass are required to be "taken up."
cond improvement relates to a mode of taking up the superfluous thread supplied to the shuttle
g a gusset, for instance, so as to keep it constantly in tension. This is effected by providing the
ith a friction roller receiving motion from the roller travelling in the shuttle race so as to coil up the
excess.
ird improvement relates to a mode of regulating the tension of the warp threads. I provide the
ead bobbin with projecting teeth on which rests successively a pin carried by a weighted bar sus-
y a thread. The latter on being pulled raises the bar and allows the bobbin to revolve for supplying
d until the next tooth abuts against the pin above mentioned, so maintaining a uniform tension.
d, *3s. 4d.* Drawings.]

A.D. 1868, July 9.—Nº 2184.

ON, **John Henry.**—(*A communication from Claude Gavioli.*)—"A new musical instrument,
f which are applicable to other musical instruments."
vention relates principally to that class of wind musical instruments known as accordions and to
sical instruments provided with free reeds or tongues, and consists in so modifying the arrangement
lows and mechanism used in connection therewith for working the same as to admit of the adapta-
he piano-forte system of keyboard without impairing the expressiveness of the instrument, and in
ation of other improvements whereby a more regular action of the bellows and a greater com-
of the parts are obtained and the harshness of tone to which the ordinary instruments of small
liable is considerably diminished. This instrument so modified the inventor designates an
ium."
d, *1s. 4d.* Drawings.]

A.D. 1868, July 10.—Nº 2185.

T, **William Leckie Graham.**—"Improvements in rotatory engines and pumps, applicable to
for measuring fluids."
vention consists mainly, under one modification or arrangement as applied to the production of
wer, of a rotatory hollow annular chambered or rimmed wheel, open on one side, of a rectangular
suitable radial cross section, tapering rather wider towards the open side, which is closed in fluid
sure tight, over the edges of the two annular peripherys forming the rotatory cylinder or motor

proper, by a stationary flat faced ring firmly secured to the main framing or sole plate, supporting the two plummer block bearings of the main revolving shaft, by preference placed horizontally (but it might be vertically), carrying the said motive power wheel, keyed or otherwise secured by its eye nearly central between the two bearings. When this engine is made single acting, to be worked by steam, it has only one induction and one eduction or exhaust duct or port formed through the stationary cover, a short distance from each other, leading into the centre of the annular space of the wheel, equivalent to nearly the length of a piston or pressure abutting block or piece revolving with and fixed into the annular recess, previously turned and polished on the two sides and bottom or solid end opposite the stationary and pressure tight jointed separate end or cover, which is also turned and made to work fluid tight by suitable packing when desired, and it has a loose steam "abutment," or "stop" slide, or valve, or trap door, hinged or jointed in a stationary recess opposite the steam port, and in front or advance of the exhaust port; disposed so that in acting it lies at an angle of about forty-five degrees (or from that to ninty degrees) to the solid back end or face on which the point bears down tight and the two edges close up against the two annular sides of the recess, all fluid and pressure tight (with metallic or other suitable packing when desired), the hinged edge nearest the exhaust port being also made fluid tight by packing screwed up from the outside of a recess formed at the end of the chamber of the cover, for receiving it back or open, flush with the smooth faced side of the cover, out of the way of the revolving piston of the chamber when it comes round, which, having its advancing end face angled like the stationary hinged stop abutment, so as to enter like a wedge and open it gently back into the recess in the cover, the back of the abutting stop or the inclined face of the revolving piston or both, having an anti-friction roller or rollers, or a spring to soften the first blow and friction of opening the stop, as the piston is passing the abutting pressure stop, may also when desired slide on edge into an angled or vertical recess pushed down close by springs, and opened against their power by the wedge side of the piston in passing it; and in this arrangement of the stops, which is most suitable for pumps and meters, the stops may slide in and revolve with the wheel, as the piston and the wedge piston blocks may be fixed on the stationary end, and form the abutting stops or blocks.

The first short motion of the hinged abutment shuts the steam, by a connecting link attaching it, to a balanced piston or other short cut off valve, fitted in a steam chest in front of the steam duct, and through which duct direct, or through a stuffing box (when connected by a lever outside), the abutting stop is connected to the rod valve to so work it. The steam raised in any ordinary generator, or when water, air or other fluid is used, is conveyed from their sources of pressure supply by pipes into an outer or entrance branch of the supply valve chest. The back and highest end of ihe revolving piston is fitted with packing so as to work tight on the face of the stationary cover, and so as to cover the exhaust port at the moment of opening the stop abutment and until the steam valve is shut, the back end of the piston has an abrupt slanting end close behind the highest packed end, which on passing the front end of the stop allows it to fall quickly down and close up the area of the chamber or revolving cylinder behind the piston, and between it and the exhaust port, all without loss of steam, as the stop abutment only permits the valve to be open at the last short part of its fall, so as to admit the steam in front of itself and behind the revolving piston which presses the piston and its wheel round with the whole pressure of the steam used. Although only one piston and one set of abutting stop steam chest, valve, and exhaust port has been described for one revolving chamber, yet still two, three, or other number of sets may be employed, which will give a corresponding increase of power in the same wheel; and there may be one piston more round the chamber than there is stop abutments and steam and exhaust ports in the end cover, which will when equally divided round the rim and cover respectively, cause all the other pistons to be in full action while any one is passing the dead point of opening and shutting the pressure stop, and shutting the steam and exhaust ports to give the effective action in each new division space of the wheel. For engines which require to be reversed, a second annular groove with pistons, ports, and valves, all formed and set for actuating the wheel in the reverse direction, may be constructed and fitted either on the same or on the other side of the wheel, with a second non-revolving end cover, which cover may be screwed towards the other across their outer periphery by bolts to assist in making good the fluid tight joints between them and the revolving wheel, which can be driven in reverse directions by suitable hand gearing, which will open the steam valves and let down the stop abutments of the whole set for so driving the engine in either direction, forward or backward, as desired. These engines are made to work on the double cylinder expansive principle, by making an outer circumferentially larger low pressure chamber or cylinder for every one of the high pressure ones in the engine, and corresponding in every way to those in the number of pistons, stops, and induction and eduction ports, only made larger in the degree of expansion desired: and these cylinders may be placed on the same or on opposite sides of the wheel. The exhaust branches of each compartment of the high pressure cylinder or cylinders being connected by bent pipes to the corresponding inlet branch of the steam supply valve chest of their respective low pressure cylinders and compartments, the latter being set and disposed so as to receive the steam at the time it is discharged from the former.

To prevent single engines of this kind stopping on the dead point, where the piston is passing the ports, or start them when stopped on that point, they have a cock or valve on the exhaust branches, capable of being shut while a cock in a small "blow-through" steam pipe, is opened into the exhaust side so as to push the pistons past the abutting stops, and when so doing, the steam valve being shut, the cock or valve for letting off the water of condensation is opened, to relieve the pressure on the steam side. And for stopping their momentum quickly a friction and break lever arrangement may be in some cases employed. Another part of this said invention has reference to an improved construction of rotatory engine of the annular rim class with a segmental loaded loose gravitating piston within it, which forms the equivalent for the fixed or non-revolving pressure abutting stops in the modification of rotatory engine described under the first part of these improvements, and consists in adapting the simple hinged abutting pressure stops of the former modification to this class of engine, as the actuating pistons revolving and hinged in the inner periphery, or a chest bolted on to it for the purpose, and double piston or short cut off or regulated balance valves, directly connected by a link through the steam entrance duct from the valve chamber or seat, or by a rod working through a stuffing box in the recess of the inner web or the chest before named when the valve is to be worked by a lever, and a rod passing out through the outer end of the valve steam chest, secured to the inner web or the recessed box into which the hinged steam pressing piston folds back out of the way of the abutting gravitating piston on the re-action side of the wheel. The branch of the exhaust pipe enters the chamber or cylinder of the wheel, close behind the hinge of the acting valve piston, which works in a widened segmental part of the web chamber between the arms, thus forming a valve face at about an angle of forty five degrees across the open chamber, against which the face of the valve piston presses fluid tight when shut down, which it does as soon as it passes the lower end of the weighted piston so as to admit the steam between itself and the lower end of the weighted piston, which it passed and which it does by the last short part of its fall before touching the face, at the same time (either by a lever on its spindle passing out through a stuffing box, or by a return link from the top of the steam valve spindles) opening a cock or equilibrium pressure valve in the exhaust branch at the same last part of its motion, all rather before the valve piston on the opposite top side of the wheel reached the top end of the floating piston, which opens it and shuts off the steam and opens the exhaust port by buffer angled springs on its extreme end, and which allows the weighted piston to rise and the wheel to turn by the force of the steam admitted below and behind the acting valve piston, and this repeated as the pistons come round past the end of the weighted piston causes the complete rotatory motion of the wheel. The entrance and exhaust steam passes up and down pipes, to the two opposite inner parts of the shaft close up to the arms of the wheel where the eye is keyed on to a solid shaft or solid part of a hollow shaft, where they are jointed to a hollow chamber or the inner part of the hollow ends of the shaft, respectively for the steam and exhaust to pass in and out through stationary stuffing box covers or conduits, at the outer end of the revolving chambers or shafts, to and from which the steam is conveyed in pipes as desired. Another improvement consists in making this wheel capable of running backwards by fitting another double set of valve pistons, and steam and exhaust valves, and their other details and fittings (connected with the same main steam and exhaust inlet and outlet conduits) between any two other opposite arms and angled and set to suit the wheel and weighted piston, turning and passing round in the reverse direction to that of the former set, the piston being formed double ended with the buffing springs, and packed in the centre in place of at the end as heretofore, the improved packing preferred being split rings checked into each other and pressed out by springs and screw pins radiating to a central tapered hole into which a conical mandril is screwed from time to time to tighten them up through a side hole in the cylinder and piston fitted with simple screw covers. When this wheel is used as a motor for traction road engines or carriages it is preferred to be mounted, as both the traction and steering wheel by its solid or hollow axle in bearing blocks on a strong wrought iron swivel frame having a large annular ring with iron balls rolling upon it, and against an under strong ring secured to the malleable iron framing of the carriage supporting the greater part of the weight of the boiler and carriage.

The swivel frame and motive wheel is turned to any desired angle for guiding the carriage by a segmental or complete spur wheel on the rim carrying the balls, and securing the swivel frame to the carriage frame, worked by a pinion on the lower end of a vertical shaft, passing up through a column or other standard surmounted at the top by a proper hand steering wheel; a vertical steering wheel and horizontal shaft with a chain barrel having the two ends of the chain from the barrel passed down round pulleys at the level of the swivel frame and rim on to which they are led and fixed on opposite sides, which arrangement would also make a good and powerful stearing gear for this rotatory wheel. The journals of the shafts of these fast and heavy rotatory motors in many cases are made to revolve in sets or rings of iron balls set properly in a recess formed in the bearing blocks for the purpose; and the gravitating piston is fitted with anti-friction rollers to roll on the inner surfaces of the chamber or cylinder; and small doors formed in the sides of the chambers by half checked joints to facilitate temporary entrance to the working pistons, valves, and packing, and insure accuracy of rejointing the doors and working faces; and when the engine is used as a traction wheel it is preferred to be cased in by strong wood casing over the traction periphery by a broad band of leather and of india-rubber and canvas over this, either with or without cork between the wood and the elastic bands, the two ends of the strap being drawn tight and fixed in narrow channels across the wood. Another improvement consists in the use of an entrance steam and exhaust chest attached to the respective pipes of the motor over its centre of swivelling motion for guiding the carriage, so that it turns on two stuffing boxes formed in it fitted in the said axial line of motion to the entrance stationary steam pipe from the boiler and exhaust pipe leading to the chimney or hot water feed chest.

[Printed, 3*s*. 4*d*. Drawings.]

A.D. 1868, July 10.—N° 2186.

HUGHES, Edward Thomas.—(*A communication from Zoeth Durfee.*)—"An improved wooden "pavement."

The inventor first prepares the roadway for the reception of his wooden pavement by covering it with hydraulic cement or other waterproof material. He then takes two sets of blocks, one set larger than the other. The larger blocks when laid make the pavement; the smaller ones are laid between the large ones so as to form a continuous groove or channel, into which broken stone or gravel is put and afterwards pitch or tar to cement all together.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 10.—N° 2187.

BROOMAN, Clinton Edgcumbe.—(*A communication from Leopold Taskin.*)—(*Provisional protection only.*)—"An improved mode of cutting or utilizing old railway rails, and an improved construction of "apparatus to be employed therefor."

The rails are cut when cold by shears, the cutting being effected longitudinally about the middle of the web of the rail. The shears are constructed so as to receive and hold the rail bottom or second head while the head is being separated therefrom; and the upper or movable cutter projects from its jaw sufficiently to prevent the jaw coming against the rail head. Several purposes for which the cut rails may be employed are mentioned.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 10.—N° 2188.

DAVIES, George.—(*A communication from Vincent Garcin and Auguste Bourlier.*)—(*Provisional protection only.*)—"Improvements in filling the spaces between the beams or joists of iron floors and ceilings."

This new system of filling for floors and ceilings of iron consists of hollow filling pieces of peculiar form made in moulds and dried in the air without burning, placed between the iron beams or joists of the flooring or ceiling.

These filling pieces have their sides oblique and made so as to fit or lock together, the ends being by preference made perpendicular; they are secured by means of plaster or cement poured into the joints, hollows or recesses being made at intervals for that purpose.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 10.—N° 2189.

JEFFREYS, John.—"Improvements in studs and buttons."

My improvements in solitaire and other studs and buttons consist in making the head (which is usually a disc attached to the end of a shank) of a crescent shape, one end or horn of the crescent being inserted in the button hole and the stud or button partially rotated in order to secure it to the article, whether it be a collar, cuff, shirt front, or other article of dress.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 10.—N° 2190.

CHURCHILL, James Dixon.—"Improvements in hot air engines."

The air passage from the air pump to the fire place is made in the bed-plate, and the hot air passage is made longer than usual by being formed in the fire lump above the fire place and between it and the working cylinder. The piston and working parts in the latter are kept moderately cool by causing a draught of air to pass through the protecting drum at the bottom of the piston. The packing of the piston is metallic, and is lubricated by a metal ring covered with cotton yarn kept soaked in oil.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 10.—N° 2191.

GLOVER, Frederick Robert Augustus.—(*Provisional protection only.*)—" Improved means of and " apparatus for fishing ships' anchors."

A ring with a light chain is adapted to one of the arms of the anchor for the purpose of lifting that arm and fishing the anchor.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 11.—N° 2192.

DAVIES, George.—(*A communication from Henry Cook and Harry Whiteside Cook.*)—(*Provisional protection only.*)—" Improvements in the construction of armour for the protection of vessels of war, fortifi- " cations, batteries, and other works of like nature."

This invention consists in an improved mode of constructing armour for the protection of vessels of war, batteries, and other analogous works by superposing alternately longitudinal and vertical bars of decreasing widths so as to form a kind of network, which is covered after the required thickness has been attained with an outer skin or plate of malleable iron.

[Printed, 6*d.* Drawing.]

A.D. 1868, July 11.—N° 2193.

RUSSELL, William.—" An improvement in machinery for making paper bags and envelopes."

By an arrangement of knives, cutters, or stamps, &c., to remove or cut out a portion of the paper either before or after it is placed on the machine where the paper is folded and made into bags and envelopes, so as to produce a bag or envelope with a single seam or fold of paper on either or both sides or bottom, instead of a double fold as hitherto.

[Printed, 10*d.* Drawings.]

A.D. 1868, July 11.—N° 2194.

TRAVIS, Thomas, PRINCE, William Henry, and TOMLINSON, James.—" Improvements in " machinery and apparatus for clearing, smoothing, stretching, and finishing yarn and thread."

Our invention consists, first, in the combined action of friction and fire for clearing and smoothing yarn and thread. Secondly, in applying brushes or other friction apparatus to act on the yarn either before or after it has passed through the fire. And, lastly, in an improved mode of applying pressure to the bobbin, on which the yarn when cleared and smoothed is wound, which pressure is sufficient to stretch and finish the yarn or thread.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 11.—N° 2195.

NIBBS, James Syson.—(*Provisional protection only.*)—" Improvements in portable and other pumps " and water engines."

This invention refers to the employment of a cylinder and single piston rod worked by a suitable handle. To the piston rod are attached two valves, a third valve being secured in the cylinder at its lower end. The cylinder is also furnished with a delivery pipe and suction hose.

The combined action of the three valves supplies air to one end of the cylinder and water to the other, the water being discharged about midway through the delivery pipe.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 11.—N° 2196.

KING, Thomas.—(*Provisional protection only.*)—" Improvements in bungs or corks for casks and other " similar vessels, some parts of which are also applicable to vent pegs."

Improvements consist in bushing the bung holes of casks or similar vessels with a bushing of metal or hard wood which is screwed into the ordinary bung hole or inlet, the interior of this bushing being screwed likewise, and a bung of metal or hard wood screwed into it, through which a self closing vent peg is inserted.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 11.—N° 2197.

MACKIE, Robert.—" Improvements in caps or bonnets."

The feature of novelty which constitutes this invention is the application of stiffening material inside the crows of Barmoral or other caps or bonnets for the purpose of facilitating the taking it off or putting it on the head.

[Printed, 6*d.* Drawing.]

A.D. 1868, July 11.—N° 2198.

BRUNTON, John Dickinson.—" Improvements in tools and machinery or apparatus for cutting slate " and other rock."

This invention consists in a new form of tool for cutting slate and other rock, the cutting edge of which is curvilinear or semicircular bevelled towards the concave side and straight down the convex side. A rigid guide is placed in front of chisel in working.

The invention further consists in a machine for the purpose of applying the chisel to cut grooves or slots, the rock being either in " situ " or detached.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 11.—N° 2199.

BROOMAN, Clinton Edgcumbe.—(*A communication from John Dewe, George Harding, and Bartholomew Lalor.*)—" Improvements in locks."

The locks are provided with wheels or indicators each marked with the figure 0 and 1 to 9; these wheels are geared together and connected with certain mechanism in the lock, so that the lock cannot be opened without a change being made in the numbers on the wheels as seen through apertures in the lock face. The figures on the wheels are capable of making 999 changes (more or less), which changes cannot be repeated without the destruction of a seal over the head of a screw in the lock. The chief parts of the mechanism before referred to are a rotating cylinder carrying a ratchet wheel and one of the indicating wheels and turning only in one direction; a slide bolt to act on the cylinder and being itself operated by the key; two tumblers to lock the cylinder after each movement, these tumblers being released by the key; a guard to cover and prevent access to the locking bolts; and three or other number of locking bolts, each having an independent action.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 11.—N° 2200.

GARSIDE, Henry.—(*Provisional protection only.*)—" Improvements in file-cutting machines."

The machine consists of a bed and framing which may be at right angles or somewhat inclined.

The bed carries a slide on which is mounted a semicylindrical anvil, on the flat face of which the file to be cut is placed. The cutting tool is fixed to a ram which is driven by means of a cam on the driving shaft and a spring which gives the blow.

The file is held in down its place by means of a presser acted on by a weight or spring, the action of which is aided by means of a tilt-lever fixed to the anvil, which by being held against a curved tilting plate fixed to the bed retains the anvil in the proper position while the file is being cut.

A screw working through a clasp nut attached to the slide gives the necessary feed, this screw being worked by means of a ratchet wheel and rocking shaft or lever worked by means of a cam on driving shaft, the working surfaces being kept in contact by means of a spring.

When cutting the files just at the points (where the teeth should be nearer together than at the other portion) the feed motion is prevented from taking full effect by means of an inclined plate fixed to the main slide.

The varying force of the blows is obtained by means of an inclined plane attached to the slide and acting on a lever attached to a tension rod which works through a nut fixed to a forked lever which bears on the ram spring. This tension rod has a hand wheel fixed on it, by turning which the force of the blow can be regulated to a nicety.

The machine is caused to stop when each course of the cutting is completed by means of an adjustable stop attached to the slide, which acting on a lever releases the strap fork, and this aided by the action of a spring passes the driving strap on to the loose pulley.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 13.—N° 2201.

EDWARDS, Ernest.—" Improvements in photography."

This invention consists in taking photographic pictures upon a sensitive surface of gelatine pigment and a suitable chromate prepared upon a glass or other surface, and transferring the same direct to paper or other material with gelatine rendered insoluble, by which permanent adhesion of the picture is obtained.

The glass or other surface with the unaltered gelatine, &c. are then washed away.

In this way the process of intermediate transfer to a surface of india rubber or other substance is avoided. Also in enlarging photographic or other pictures on such sensitive surfaces in the way described.

A.D. 1868, July 13.—N° 2207.

MUNRO, Archibald, and ADAMSON, William Bennet.—" Improvements in the manufacture of " iron and other metallic substances."

The feature of novelty which constitutes this invention is the production of metallic articles which require to be hard and enduring by casting the same in chills suitably formed for the articles desired in each case.

[Printed, 4d. No Drawings.]

A.D. 1868, July 13.—N° 2208.

MATHER, George Radford.—(*Provisional protection only.*)—" Improvements in mills for grinding or " mixing colors or other matters."

The color or other matter and the oil or other fluid to be ground or mixed therewith are placed in a vessel, the lower part of which terminates in the smaller end of a cone, the axis of which is in or about a horizontal direction. In this cone is applied another correspondingly formed cone, and the two conical surfaces in contact constitute the grinding surfaces. The internal revolving cone is formed of steel or iron with its conical surface chilled, and this surface is also provided with grooves which extend nearly across, such surfaces being closed at one end and opening at the other alternately to the ends of the cone.

These grooves are placed on this surface in a direction inclined across the axis or otherwise, and are of form such as to equalize the wearing surfaces. The end of this cone and of the corresponding part of the chamber may be grooved or plain or have teeth to facilitate the crushing of the matter. The part of the chamber to receive the end of the revolving cone or the cone is also larger at the receiving end to facilitate the admission of the matters to be ground, or this enlargement may be partly in each. The axis of the internal cone when passed through the side of the vessel is formed with a projecting flange or boss, and it receives between this flange and a conical end of the cone a packing of leather or other suitable material in a chamber formed for it in the vessel to prevent the escape of fluid in that direction. The axis is turned by a winch handle or by other suitable means.

The extent of cut is adjustable by a lever and set screw.

The power may be applied at either side, and otherwise variations may be made in the relations of some of the parts.

[Printed, 4d. No Drawings.]

A.D. 1868, July 13.—N° 2209.

BETJEMANN, George, BETJEMANN, George William, and BETJEMANN, John.—" Improve-" ments in book slides."

The invention relates to the application of means whereby the slides are operated by suitable gearing or connections so as to cause them to travel outwards and be retained in any suitable position whilst the books are being changed or removed, or otherwise, and then when it is desired to cause the ends of the slides to close upon the books, the parts acting upon the slides are thrown out of gear or disconnected, so as to allow springs to act on the slides to draw them towards each other.

[Printed, 8d. Drawing.]

A.D. 1868, July 13.—N° 2210.

LAKE, William Robert.—(*A communication from Moritz Hilf.*)—" Improvements in the permanent " way of railways."

The railway, as constructed according to my improvements, consists of ground plates of rolled iron resting on a gravel bed, to which plates the rails are fastened by screw bolts. Cross pieces of round iron connect the rails, and a plate is laid over the joints of the same. The advantages of this mode of construction consist in permitting the use of a light rail, in the cheapness of manufacture, and in the facility with which rails can be replaced. The giving way of the outside rails on curves is prevented, and the said rails take their proper form on a curve by being secured o the ground plates, the bolt holes of which are set out to the required radius.

[Printed, 10d. Drawing.]

A.D. 1868, July 13.—N° 2211.

LAKE, William Robert.—(*A communication from Thomas Clare Hargrave.*)—" Improvements in rail-" way carriages."

The said invention consists, firstly, in a novel means of applying the power to the wheels near to their peripheries, thus increasing the leverage and reducing in a corresponding degree the amount of power required to move the load. Each pair of wheels is carried on a hollow axle, through which passes another

A.D. 1868, July 14.—N° 2217.

COPE, James, and BRADBROOK James.—"Improvements in apparatus to be used in bookbinding."

The rounding machine consists of a moveable vice in which the books are held by their fore edges. This vice is capable of moving up and down or of turning round on a vertical centre pin.

In the blocking machine there is a knuckle joint working by a cam excentric or crank as a means of raising the bottom bed.

The trimming machine is provided with a revolving circular knife. The books are placed on the table which moves on travelling rails. Any number of books may be placed thereon and carried forward against the circular knife which trims or cuts the edges.

The tooling machine is provided with a roller either engraved in one piece or made of moveable pieces fitted on a spindle. The book with the cover on is held securely by a vice, and the engraved roller is then passed over the back so as to impress the back with the ornament.

[Printed, 3*s.* 4*d.* Drawings.]

A.D. 1868, July 14.—N° 2218.

WOOD, Thomas.—"Improvements in the construction of railway carriages, and in the method of coupling " the same, as also in the method of and apparatus for signalling between passengers, guards, and engine " drivers of trains and officials and others at stations and other places."

The first part of my invention is designed for the purpose of increasing the accommodation for passengers in railway carriages by a novel arrangement and construction of its internal seats, doors, and passages.

A second part of my invention relates to a novel arrangement of apparatus whereby the passengers may communicate with the guard in cases of great necessity, and consists in connecting tassels or handles with a chain or cord running over bowls inside the ventilator and attached to a lever and spring at each end of the carriage that are connected to a frame containing a red glass near to which is a lamp with a powerful reflector, the front of the lamp throwing out a white light and the back a red one; the communicating cord is also connected by separate chains or cords with secret bolts placed inside the framework of each door, thus when the handle or tassel is pulled it simultaneously throws a red glaring light along the length of the train and also actuates the secret bolt of the carriage door from which the alarm has been communicated so as to lock such door, preventing thereby the escape of any person therefrom. Tubes containing signal rockets are applied in the guard's van so as to signal to other trains or stations any accident that may occur.

And, lastly, my invention relates to a novel arrangement of self acting couplings for connecting one carriage with the other, and consists mainly in connecting the coupling gear with four bars which embrace the ordinary draw bar.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 14.—N° 2219.

SHAW, Wright.—"Certain improvements in looms for weaving."

This invention consists, first, in the use and employment of double acting levers mounted on the loom frame and reciprocating in opposite directions which act in combination with a bowl mounted on a fixed stud on one of the levers, and which is caused to slide laterally by a lever motion governed by the pattern chain so as to bring the bowl in contact with one of two tappets of different diameters which actuate the same, thereby giving movement to the double acting levers and to rods suspended therefrom, which are provided at their lower extremities with notches or teeth.

A second part of the invention consists in an improved construction and arrangement of the "box rod," the upper part of which is attached to the boxes as usual, but the lower part is provided with a series of teeth or notches corresponding with the teeth or notches on the ends of the aforesaid rods.

A third part of the improvements consists in an improved method of actuating the chain by the interposition of a spring between the lever carrying the barrel or cylinder and the tappet giving motion thereto.

A fourth part of the improvements consists in the application and use of a double catch having two curved claws in the form of a horse shoe.

Another part of the improvements consists in an arrangement of apparatus for varying or continuing the number of picks from the same card, and thus reducing considerably the number of links and cards in the chain.

Another part of the improvements consists of a novel arrangement of apparatus whereby pattern chains varying in length may be actuated without causing any slackness.

Another part of the improvements consists in the application, employement, and use of shuttle boxes such as are used for plain weaving instead of the drop boxes when required.

A.D. 1868, July 14.—N° 2223.

THOMPSON, John, and INGRAM, James George.—" Improvements in caps for feeding bottles for " infants and invalids."

This Provisional Specification describes forming the cap of a feeding bottle of india rubber moulded to form in dies by pressure, and vulcanized-fibre is also combined with the india rubber of which the sides of the cap are composed; a ring of metal may also be embedded in the rubber at the top of the cap. A hole is formed through the centre of the top of the cap, through which is passed the flexible tube through which the contents of the bottle are to be drawn off; fine perforations are also formed through the top of the cap.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 14.—N° 2224.

HANNART, Louis, and AUBERTIN, Nicolas Alphonse, the younger.—(*Provisional protection refused.*) —" Improvements in the manufacture of door plates, name plates, stencil plates, and sign plates suitable for " sign boards for the fronts and other parts of shops and other buildings, and for other similar purposes."

These improvements consist in taking a thin sheet of metal and cutting the letters entirely out by means of a rotating saw or other suitable cutting instrument, the plate being moved on a table in the direction of the shape of the letters, after which the plate so cut out is fixed to a plain piece of metal or other suitable substance or material either painted or colored on one side; or a colored substance may be placed between the two plates; or the letters may be filled with colored wax as commonly practised.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 14.—N° 2225.

HANNART, Louis, and AUBERTIN, Nicolas Alphonse, the younger.—(*Provisional protection only.*) —" Improvements in the manufacture of printers' type, numerals, and other characters and devices or designs " capable of being printed from."

The novelty of this invention consists in casting letters and other characters in one long piece of metal and afterwards planing the same and cutting it up into separate pieces or letters. Another mode is by rolling and planing metal into a long strip, and after drawing the letters thereon cutting away the metal surrounding the letters, and then cutting the piece up into separate letters.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 14.—N° 2226.

LAWRENCE, Henry.—(*Provisional protection only.*)—" Improvements in moving furnace bars."

This invention relates to the construction, arrangement, and operation of those furnaces wherein endless chains or rows of fire bars travel around drums or tumblers.

Part of the present improvements consists in dispensing with the through bolts and cotters, and in so arranging the fire bars that they travel in one, two, or more endless chains or rows, and by alternately varying the speed of each chain or row of fire bars their sides are prevented from being in continuous contact.

Each fire bar or alternate row of fire bars as they pass over the several supporting rollers are caused to receive a slight lifting and lowering motion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 15.—N° 2227.

TAYLOR, Alfred.—(*Provisional protection only.*)—" Certain improvements in spring studs applicable " for uniting and securing together wristbands, shirt and dress fronts, collars, and other articles or parts of " dress."

The novelty of this invention consists in constructing studs in duplicate parts and retaining such parts together by a spring shank entering a concentric tube.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 15.—N° 2228.

DE BERGUE, Charles, and HADDAN, John Coope.—" Improvements in strong rooms and in " safes."

Constructing strong rooms of thick iron or steel plates or slabs clipped or held together by girders or by the form of or fittings on the plates themselves, and with or without the addition of bolting or keying from the interior, and setting the same in brickwork, masonry, or concrete.

And constructing cylindrical double case safes with the inner lining of door fitted against the inner case. And making inner case of cast iron and outer case of wrought iron. And making the door at end to open d close after the fashion of the screw movement of a music stool. And making hinged door on flat end cylinder of the size of the inner case or to fit an annular plate covering the space between the ses.

[Printed, 3s. Drawings.]

A.D. 1868, July 15.—Nº 2229.

OLLINGWORTH, William, and HALSTEAD, Henry.—(*Provisional protection only.*)—"Improved means or apparatus for regulating the amount of gas supplied to street and other lamps to render it unnecessary to shut off and relight the same."

A hollow chamber in which a piston or cap freely moves is screwed upon the end of the supply pipe ich projects into the chamber forming an annular space for containing mercury. The burner is fixed the said piston, which is caused to float in the mercury, so that on the pressure of gas being removed or minished the orifice conducting to the burner is quite or nearly closed.

[Printed, 4d. No Drawings.]

A.D. 1868, July 15.—Nº 2230.

OUTY, René, and RICHARD, Jules.—"Improvements in the construction of instruments for facilitating vocal instruction at schools."

This invention consists of a rectangular box divided into three compartments, outside the first of which gamut of do, re, mi, fa, sol, la, si, do, is printed; the second contains the notes similar to those of an cordion; and the third constitutes the air chamber which communicates by an india rubber tube with a llows.

This apparatus is hung against the wall, and the bellows, which is worked by the foot, is fixed to the oor.

The keys are circular like those of the accordion, and are arranged on the lines and spaces of the scale, ch one having printed on it the note with which it corresponds, so that on the instructor or pupil pressing one of the keys, say, for instance, the first, do, that note vibrates by aid of the bellows, so that the pupil ay learn and sing the notes of the gamut with the instrument without the assistance of the instructor's oice.

[Printed, 8d. Drawing.]

A.D. 1868, July 15.—Nº 2231.

HAMBERLIN, Robert.—(*A communication from Otis Adams and James Hatch.*)—(*Provisional protection ly.*)—"A new or improved tool or chisel for mortising machines."

The tool is formed with two side lips bevilled at an angle of or about 45° degrees with the face of the isel; the lips are dove-tailed inwards and upwards. The side lips, which are also bevilled sufficiently clean the sides of the mortise, project about the ⅛ of an inch below the edge of the main bevil. When e chisel enters the wood the two side lips which project below the edge of the principal bevil (by cutting ay that portion of the chip which adheres to the sides of the mortise) allow a free passage of the main ip upwards through the dove-tail. When the chisel is drawn from the mortise the chip is retained by its n natural swelling in the upward dove-tail and prevented from falling backwards by the inward dove-tail til easily displaced by the succeeding stroke.

[Printed, 4d. No Drawings.]

A.D. 1868, July 15.—Nº 2232.

OHNSON, John Henry.—(*A communication from Marie Chausy.*)—"Improvements in lamps."

This invention relates to a cheap and simple form of lamp intended for burning, by the aid of a wick, ghly volatile vegetable and mineral oils, and consists in making the whole of the body and burner of the mp of glass, porcelain, earthenware, or any ceramic material in lieu of metal, and in employing a cotton other wick as an absorbent of the volatile oil introduced into the body of the lamp, so that no free liquid ill be contained therein, the vapour alone emitted from the top of the wick being ignited, and hence bility to accidents from spilling the oil is greatly reduced. The burner should project from two to three ches above the neck of the lamp in order to prevent any transmission of heat to the interior of the body the lamp, and a small transverse pin hole for the insertion of a pin for raising and lowering the wick may provided therein. This burner has a longitudinal opening made therein for the passage of the wick hich should fit it tightly. The exterior of the lower part of the burner is ground and accurately fitted to the neck of the lamp in order to prevent all access of air to the interior, and the wick itself should be sufficient length to absorb oil enough to last the required time of burning.

[Printed, 8d. Drawing.]

A.D. 1868, July 15.—N° 2233.

BONNALL, John.—(*Letters Patent void for want of Final Specification.*)—" Improvements in drills for " distributing corn, seed, manure, and water."

The invention relates, firstly, to chain corn, seed, or manure drills, and consists in the employment of springs to carry or act upon one set of the pulleys around which the chains pass, such pulleys being thrown out of action when desired by means of levers, cams, or eccentrics acting upon each of the springs separately.

The invention also consists in the employment of a chain transversely of the machine for feeding the corn, seed, or manure to the guide boxes, a series of slides being employed to shut off the communication between the seed box and the chain.

The invention also consists in the employment of a coiled thread fixed at one end on its shaft or axis to feed the seed, corn, or manure to the guide boxes, such screw being acted upon by a screw or otherwise to render it capable of adjustment.

For distributiug liquid manure or water a tank or reservoir is employed which is slung by means of universal joints on an axle or frame passing over the top thereof, the liquid manure or water being supplied to the coulters by atmospheric pressure created within the tank or reservoir by means of an air pump or pumps worked from any suitable part of the drill, a safety valve being employed to regulate the pressure. Cocks or valves are employed to regulate the flow of the liquid manure or water, and when distributing liquid manure it is preferred to cause the air to enter the tank or reservoir at or near the bottom thereof.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 15.—N° 2234.

COOK, Thomas.—(*Provisional protection only.*)—" Certain improvements in presses for the expression of " oil and other fluids."

The novelty of this invention consists in constructing presses with a deep narrow box and exerting pressure on the edge of the substance therein instead of on the broad surface thereof as commonly practised. Another novelty consists in making the piston rod or plunger of the shape and size of the box containing the substance to be pressed, and connecting this piston rod or plunger to a cylinder or cylinders into which steam is admitted for working the plunger, or it may be worked by other means. Also in using strainers formed of laths of metal with grooves therein, and adapting a false or sliding bottom to the box.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 15.—N° 2235.

TURNER, William.—" Certain improvements in buckets to be employed in air pumps and other " pumps."

The novelty of the invention consists of an outer metallic ring having an internal flange supported by the bottom plate of the body of the bucket, the ring and flange being at one part cut entirely through or split vertically, and the flange at several parts as far as the inner surface of the ring. Upon the flange between the ring and the body of the bucket one or more rings of india rubber are placed, upon which a flat metallic ring bears which acts as a "washer," and in the top plate of the bucket there are screws which when turned in one direction act on the flat ring and press upon the india rubber which expands and presses the outer metallic ring against the cylinder or barrel.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 16.—N° 2236.

MACFARLANE, James Laird.—(*Provisional protection only.*)—" Improvements in shirt fronts."

The shirt front is manufactured with the effect of a cravat or tie produced on it or in it, thereby dispensing with the need of a separate cravat or tie.

The effect is produced either by weaving or by printing. When the effect is produced by weaving the material employed may be silk or a mixture of silk and cotton, or jute, or other material that will bear washing with the shirt front.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 16.—N° 2237.

WHISTON, Robert.—(*Provisional protection only.*)—" An improved safety window and window sash lock " fastener."

The features of novelty of this invention are, the curved form of the arm ; its adaptation to the spring, so se it to be self-acting, when pressed out of its lock-position; and the firm hold-fast, or lock of against the plate on one side, and the catch-plate on the opposite side.

l, 6*d*. Drawing.]

A.D. 1868, July 16.—N° 2238.

HENRY WILLIAM, and SHACKLETON, THOMAS.—"Improvements in machinery or appar winding warps or threads of cotton, wool, or other fibrous substances."

rous substances are wound in single ends from a beam or large bobbin onto a series of small riven by frictional contact with pullies, and traverse motion may be given to a series of guide iiding the ends to the said bobbins in regular order.

l, 1*s*. Drawings.]

A.D. 1868, July 16.—N° 2239.

, RUBIN.—(*Provisional protection only.*)—" A new apparatus for the rapid boiling by means of l fire, and for a self-acting bellows for aërating the same."

pal parts: for fire, for water, and for draught.

for exampel thus:—Tin cylinder certain height & breadth, at certain distance from bottom a from the middle of which there arises a smaller cylinder ½ inch above level of larger cylinder, in smaller cylinder holes. Cover for larger & for smaller cylinder. Smaller cylinder is the grate. nd this, which may be divided into compartments, is for the liquid or solid things to be boiled or

ng draught.—Chimney of at least 8 inches in height placed on smaller cylinder, apax narrower . Below partition a door; 2 inches from partition a horizontal row of holes each ⅜ inch diamr., rt from each other; below another row of holes each vertically under one in upper row, continued oor; from lower holes to bottom a distance of 1 inch from centre of lower hole.

there *may be* no rows of holes, but an ascending or descending tube connected with lower part; oint of connexion equal to diamr of apax of chimney; diameter at other extremity equal to diamr chimney, *or* the bellows *be* applied.

ing self-acting bellows.—This bellows acts *completely* upon the principal of wheels & axle, moved & cord, or the spring with lever, and supplies increased draught to the self-boiler, applied to it e hole.

re other appendages for use not bearing upon action.

l in the grate, lit by a light through the door in the lower partition, chimney placed on, and sed draught caused by one of the given ways, the water will boil within 3—6 minutes.

of the chimney covered mitigates, the smaller cylinder covered extinguishes, the fire.

l, 4*d*. No Drawings.]

A.D. 1868, July 16.—N° 2240.

R, THOMAS FITZ-GERALD.—(*Provisional vrotection only.*)—" Improvements in apparatus for ing, principally intended to be used for ventilating rooms or apartments in houses or other rs."

aratus consists principally of a rectangular box or frame fitted with a wire gauze screen and a ss shutter.

e gauze screen is folded backwards and forwards horizontally in a zigzag or serpentine form, and hutter slides vertically in contact with the inner edges of these horizontal folds, which are all in vertical line.

form of the apparatus consists of a frame enclosing a vertical screen of wire gauze, and having flange, by means of which it may be inserted in an opening made through a wall (such opening preference the size and form of a brick). Two of these frames are applied to the opening, one apartment and the other outside the building or wall, both being flush with the wall, so that be applied with equal facility to walls of any thickness. The inner one is provided with a tter or door.

l, 4*d*. No Drawings.]

A.D. 1868, July 16.—N° 2241.

L, DANIEL.—(*Provisional protection only.*)—" Improvements in the masting of ships and "

ect is to lower the masts when required. For the lower masts is substituted a pair of sheers or legs secured at the two sides of the vessel respectively. The apex of the sheers forms an upper cap for the topmast, and a girder between the sheers forms a lower cap as well as a truss for the lower yard. To lower the sheers their feet are freed from shoes to which they are bolted, and the sheers are then lowered until they rest on a crutch. The topmast can be struck by sliding in the caps.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 16.—N° 2242.

RAMSDEN, JOHN CARTER.—(*Provisional protection only.*)—"Improvements in the mechanism or "apparatus of looms for producing a certain class of fancy fabrics."

The first part of the invention relates to a method of forming the shed required in weaving that class of goods in which spots or figures are inserted, whereby a figure may be woven containing plain cloth within the outlines without loosing a ground "pick."

This is accomplished somewhat as follows:—

Both healds and a common jacquard apparatus are employed and so arranged that when the jacquard is in operation the warp threads are free to work up and down in the healds without any strain being placed thereon, and when the healds are in operation the warp threads are free to move up and down in the harness without any strain.

The healds are used for forming the shed for the ground shuttle and the harness is used for forming the shed for the extra material contained in the figure.

The healds are "knit" as fine again in the set as ordinary healds, and contain no eyes or mails, the top and bottom of each heald are simply looped together.

One thread of warp is placed through the top half of the backmost heald and through the bottom half of the next heald, the next thread of warp is placed through the top half of the next heald and the bottom half of the front heald, and so on.

Two of the healds are used for lifting the top part of the ground shed and the other two for depressing the lower part. By means of gearing and tappets I cause the two healds through the lower part of which the warp passes to be raised into such position that when the jacquard is in operation the threads lifted thereby are free to move without strain to the back rods.

The harness of the jacquard contains neither eyes nor mails, but is simply looped like the healds before described.

In forming the shed for the figure the jacquard is at or about full lift when the reed recedes from the cloth; the shuttles, needles, or bobbins are then inserted and the jacquard closes its shed as the ground shed formed by the healds is opened.

The second part of the invention relates to a method for inserting the extra material required for forming the figure.

On the front of the loom is placed a bar which is free to move backwards and forwards in front of the batten; to this bar are fixed as many circular grooves as are required. In each groove is placed a shuttle which is curved to the circle in which it works; a recess is cut out of the front of each circular groove, and when the reed recedes from the cloth the bar to which these circular grooves are attached is caused to move toward the warp; that portion of the warp which is opposite the recesses is then operated by the jacquard, and a shed is formed through which the shuttles are made to pass; these shuttles are operated by arms which are brought into action by means of pins or racks or some mechanical equivalent actuated by means of cams or tappets, or in other suitable manner.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 16.—N° 2243.

LAKE, WILLIAM ROBERT.—(*A communication from George Smith Fisher.*)—"An improved implement for "cutting hay, straw, and other like substances."

The object of the said invention is the construction of an implement for cutting hay, straw, and other materials from a mow stack or truss in a more convenient and expeditious manner than has been hitherto practicable; and the said invention consists chiefly in the peculiar combination of a cutting blade or knife with two handles, one of which is formed or fixed at the extremity of a rod or stem which carries the knife, while the other handle projects at right angles from the said rod.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 16.—N° 2244.

LAKE, WILLIAM ROBERT.—(*A communication from George Smith Fisher.*)—"Improvements in links or "couplings for harness and other purposes."

'he said invention consists partly in constructing links or rings of wire with a split or division which is ened at the exterior of the link to facilitate the introduction of the same within another ring or connec- . The said invention also consists partly in combining with the said split links or rings a tongue or h to form a buckle.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 16.—N° 2245.

VIS, Samuel.—(*Provisional protection only.*)—" Improvements in apparatus for clipping horses, sheep, r other animals, or the wool or hair from the skins of animals."

his invention relates to the arrangement and construction of apparatus for clipping horses, sheep, or r animals, or for clipping the wool or hair from the skins of animals where a comb and cutting surfaces employed, actuated by one hand of the operator only.

Printed, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2246.

ULTON, George.—" Improvements in pentagraph engraving machines employed in the engraving of ylindrical or other surfaces."

'his invention relates to means for readily reversing the motion of the tool carriages or the roller in raving machines when it is required to turn the pattern over. This is effected by actuating the tool through an endless band of steel, the said bar being connected to one portion of the band or to a ion moving in the contrary direction according as the movement of the tools is required to be in the e direction as the tracer or contrary thereto. In another arrangement the reversing is effected by means he band connected to the tracer carriage, the said band being passed twice over the carrier pullies. connection is effected by a screw acting alternately on two clips according as it is turned in one direc- or the other, the clips bearing on the different portions of the band. When both clips are released the tepping" can be readily effected. To adjust the design upon the surface to be engraved one or more of small band pullies is or are expanding pullies. To reverse the roller being engraved one or more ermediate rollers is or are interposed between the wheel giving motion to the roller and the surface of the l roller.

[Printed, 1*s*. Drawing.]

A.D. 1868, July 17.—N° 2247.

LIS, William Irlam.—" Improvements in cranes."

The construction of cranes with moveable levers or jibs, to which a machine is directly attached for ing and lowering it as a lever and the load with it as required; and the arrangement of the parts of ependent swing cranes supported from below only (as by the foundation or carriage) so that the post may dispensed with and a bolt used in its place.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, July 17.—N° 2248.

NNELL, Edward.—" Improvements in signalling on railways."

The principle of this improvement being the distant oscillation of a disc, combined with the striking of ell or gong on the passage of a train over a connected treadle, by which means every approaching train es warning to the signalman or gate keeper at any distance in advance without the aid of manipulation.

[Printed, 1*s*. Drawings.]

A.D. 1868, July 17.—N° 2249.

'ONE, Cecil Percival. — (*Provisional protection only.*) — " Improvements in the construction of vessels of war."

These improvements consist,—

Firstly, in providing a means of rapidly sinking the greater portion of the hull of the ship usually above ter so as to present less surface to attack, for which purpose the ship is furnished with a double skin, the ace thus obtained to be filled with condensed air, the length of the vessel is also divided into sundry uidistant water tight and air tight compartments filled separately or together with air by means of an air mp or pumps; a series of cylindrical or polygonal cisterns are also placed in contiguity and equilibrating ship's centre of gravity, the space between these cisterns communicating with the space between the skins, l each cistern receiving water derivable outside the vessel and admitted by a sluice valve regulated by a necting rod with the engine or otherwise, each chamber being also fitted with a water tight metal plug or ton-drum-head freely moveable up and down to adequate pressure, and with a tube and stop cock or valve, on opening which a current of condensed air is directed downward upon the piston plug, causing it to press out the contained water from the cylinder or cistern. Thus the vessel is made to sink at will by the weight of water admitted and to rise again on its expulsion.

Secondly, in giving additional protection to the upper or fighting deck, for which purpose the ship's sides are made to converge or recede inwards from the load line or orlop deck at an angle more or less acute up to her main or gun deck, which is arched over with a deck constructed of wrought iron, thinning from the crown towards the sides, an extra plate being placed at the spring of the arch. Above this arch is a light wooden deck, virtually the ship's spar deck, the whole intervening space between the iron deck and this deck being filled with thick closely coiled hempen cable to act as a fender against shot. This deck also carries turrets worked by capstans from the orlop deck which is sunk when the vessel is going into action, and the iron deck may be pierced with re-entering ports for guns if desired.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2250.

WOOLLAN, Ann.—(*Provisional protection only.*)—" A new or improved fastener or protector for securing " watches, purses, and other similar articles so as to prevent robbery from the person."

The chief feature of novelty in my invention consists in the use of a peculiarly formed hook forming part of or attached to a back plate, such back plate being capable of being sewn, rivetted, or otherwise secured on or in an article of apparel. The ring or loop of the watch or other article to be secured is put on the hook which is closed at the top by means of a hinged catch. Upon the catch being released the hook springs open and the watch may be detached by the same hand that opened the catch; but, with the catch secured all pulls on the watch or other article will be resisted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2251.

DUGUID, John, the younger.—" Improvements in the manufacture of paper and in the means employed " therefor."

This invention consists in employing webs of wire cloth in place of felt on the rollers or cylinders over which the paper or pulpy material passes on its way from the paper making machine. The wire webs are woven in looms and put on in the same manner as the felt at present used.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2252.

MUIR, William John Cockburn.—" Improvements in the construction of the permanent way of " railways."

This invention consists firstly, of a sleeper made of cast, wrought, or malleable iron or steel with a horizontal flange carried wholly or partly round its outer perimeter and so much above the base of the sleeper as to leave a vertical edge or rim round the base under the flange for securing a perfect gripe on or in the ballast. The normal transverse section of the body of the sleeper exclusive of projections being a semi-ellipse, or in the half of any other curve resulting from a conic section. Secondly, in the application of this sleeper to a flat bottomed rail.

Thirdly, of a method of holding the rail to the sleeper by the employment of a gripping piece or clip of iron or steel so formed as to fix also the tie bar which connects a pair of sleepers, the tie bar having a projecting head hole, slot, notch, or groove at or near each end, and the gripping being held firmly in place by a key or wedge.

Another method of fixing the rails is by a gripping piece and key or wedge which is free of the tie bar, or by a wedge clip with serrated edge or edges; in these cases the bar is held by a separate wedge, key, or cotter. In addition to the foregoing any ordinary fastening for the rail and tie bar, such as a jib and cotter, wedge, or key, serrated or not, or bolts and nuts in combination with the form of sleeper hereinbefore described may be adopted.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 17.—N° 2253.

GALLOWAY, Charles John, and HOLT, Charles Herbert.—" Improvements in boilers for " generating steam and in apparatus connected therewith for heating the feed water."

The improvements relate (1) to forming boilers in two parts, one over the fire space the other some distance below. These parts being connected together by tubes, by preference enclosing the fire space. The lower portion forms a receiver for sediment. The upper and lower surfaces of the upper portion of the boiler ted together by series of conical tubes which serve as stays and flue spaces. Balls or other water are placed under the lower end of these flue spaces to prevent too free passage of heated products hem, and such chambers are connected with the water of the boiler for free circulation through uitable pipes.

per part of the boiler may be continued down and form a jacket to the fire. (2) To arranging h two series of horizontal chambers placed at some distance apart over the fire, each of these mbers communicates with an upper one by a series of vertical pipes, whilst the upper and lower are by horizontal pipes connected to transverse chambers, and these with each other to secure 1.

ted products from the fire pass between the successive series of chambers and pipes, and in so d to superheat the steam in the upper portion of the upper chambers. (3) The improvements ividing the damper openings from the flue space of the feed water heating apparatus into a series s, each capable of being regulated so as to divide the current into a number of streams; and also provements relate to giving the up and down motion to the scrapers of such apparatus by an external and an internal gear wheel and pinion, or what is commonly known as the mangle

, 10*d*. Drawing.]

A.D. 1868, July 17.—N° 2254.

Villiam, and **EADES, William Thomas**.—(*Provisional protection only.*)—" Improvements in us for obtaining and communicating motive power, specially applicable for lifting weights."

ention refers to the obtaining of a powerful lifting or raising medium with a ready means of such power and requiring but slight manual exertion.

ffected by means of a combination or arrangement of toothed wheels or pinions and ratchet llars upon shafts, an adjustable lever arm or handle being connected to one of the shafts. A eak for lowering is connected with the apparatus, and a drum or winding spindle upon a shaft y a pinion from the other toothed pinions.

, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2255.

E, Alexander.—(*A communication from Henry George Robinson.*)—(*Provisional protection only.*) vements in liquid meters."

ention consists principally in constructing liquid meters on the float principle, and consists of a istern with four compartments, two of which contain floats. In the third compartment is a weight which is employed to work a valve in the fourth compartment, and this tumbling weight d to each of the floats, the descent of the floats acting upon the tumbling weight will cause it r and thereby reverse the position of the valve and allow the empty compartment to fill with

, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2256.

S, John.—(*Provisional protection only.*)—" Improvements in the construction of vessels or rs for cooling and preserving edibles and liquids, and for other cooling purposes."

elty of this invention consists in constructing cooling or refrigerating vessels or chambers of metal or other material in combination with any absorbent substance, by preference French stone . This substance I use as a lining by placing it between two pieces of perforated metal or other e shape of which will depend on the purpose for which it is required. The absorbent material rated with water holds it in suspension, and as the water evaporates it produces cold.

, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2257.

, Solomon.—" An improved fastening especially applicable as a sash fastening."

ening consists mainly of two bars, arms, levers, or plates working on axes, centres, pins, or pivots. oothed at the ends where they engage with each other, and they are worked so that their other ach to and recede from each other.

is worked by hand, and its teeth engaging in the other bar work it outward or inward as

e bars approach and lie together over the division or opening of the sash or article to be fastened ng is effected, the teeth, aided by a spring, keeping the bars closed.

To open the fastening the bars are worked outward, so that they are pushed clear of the division or opening, and the sash or article may be opened.

It is best to form one bar with a lip, projection, recess, or socket to lie over or embrace the other bar when closed.

The toothed ends of the bars are preferably constructed by forming the teeth on the square or nearly square ends of the bar on two sides of such ends, i.e., the butt end and part of the side or length of the bar, rounding off the angle.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 17.—N° 2258.

MELDRUM, Robert.—(*Provisional protection only.*)—" Improvements in machinery or apparatus for " raising and discharging fluids."

This machine or apparatus consists of several divisions or chambers, the lower one being a condenser with a central tube, through which a piston rod works which has a piston (which piston may be formed of two discs with a space between). This piston works in the upper or steam and chamber, and this has an inlet from a well or other source of water supply and an outlet or discharge passage. Proper valves and passages and a second piston are provided so as to ensure that the action of the machine shall effect the desired results referred to in the title.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 17.—N° 2259.

COWPER, Edward Alfred.—(*Provisional protection only.*)—" A new or improved glass ornament " applicable to lace and other fabrics, and the instruments or apparatus employed in the production of the " same."

This invention consists in punching out small pieces of glass from a heated sheet, thus producing pieces with one rounded face and one flat face, which is attached to the fabric by cement.

Instruments for making the same are described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, June 18.—N° 2260.

SOWDEN, David, and STEPHENSON, Reuben Calvert.—(*A communication from Thomas Hatch.*) —" Improvements in shuttles employed in looms for weaving."

The novelty consists in,—

Constructing the pikes of shuttles with a spring attached at the point and a spring plate applied at the root end, so that when the pike is turned out from the shuttle the said plate presses the spring to the pike, thereby allowing the spools to pass on or off freely without force, and when the pike is returned into the shuttle the spring is at liberty to expand and thus hold the spool thereon, being aided by the usual hooked and bent end of the pike.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 18.—N° 2261.

WEBSTER, Daniel.—" Certain improvements in the manufacture of gas, and in apparatus connected " therewith."

The novelty of the invention consists in the employment and use of a hollow ball seated upon a conical seating applied within the ordinary gas exit pipe or " stand pipe," and acting as a valve, such ball being suspended by a chain passing over a pulley or attached to a lever, so that when the gas is rising up the " stand pipe " it will lift the ball valve and pass on, but if the retort be opened for refilling or other purpose, and the gas ceases to rise its own weight or the back pressure from the other retorts closes the ball on to the seating and prevents the gas escaping into the open retort.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 18.—N° 2262.

KENDRICK, Thomas, and DAVIES, Simeon.—" Improvements in fire-irons, part of which invention is " applicable to fenders, to stove grates, and other fire-places."

In the manufacture of fire irons called " tongs " it has been the custom hitherto to forge the same in separate pieces, such as legs, bow, and head or handle. Now the first part of our invention consists in casting the head, bow, and one leg in an entire piece either in brass, iron, or other material. On the sides of the bow or contiguous thereto there are two projections by means of which the tongs will open when the said projections are pressed simultaneously.

The second part of our invention relates to ornamenting fire irons, namely, poker, tongs, and shovel, and nsists in the application of ornamental metal tube to the legs and handles of these articles.

The third part of our invention consists in the application of ornamental metal tube to certain parts of nders known as the bar or rod. The bead and the moulding, or the said bar may be cast so as to produce ornamental design in a fender.

And further, the ornamental metal tube is applicable to stove grates in which we affix portions of the id tube round the arch and upon the plate in various outlines for ornamental effect.

[Printed, *4d.* No Drawings.]

A.D. 1868, July 18.—N° 2263.

HNSON, CUTHBERT GREENWOOD.—"Improvements in kilns and apparatus for drying and burning bricks and other articles."

This Provisional Specification describes drying and burning bricks and other articles by placing them trucks which are run into kilns or furnaces so arranged that the flat tops of the trucks form the ttom of the kiln; and there are various ways described of arranging the flues. When the bricks or other ticles are sufficiently dried the trucks are run out at the opposite side of the kiln, and the bricks are then aded on to other trucks running on rails in front of a series of kilns, into any of which they can be then n to be further dried or burned.

[Printed, *2s.* Drawings.]

A.D. 1868, July 18.—N° 2264.

ILL, JOSEPH.—"Improvements in engines for obtaining motive power."

The Provisional Specification describes various methods of economizing heat, and consequently fuel, in rking heat engines.

1. Modes of coating the interior surfaces of the cover and bottom of the cylinder and piston and other rts of an engine.

2. Making the cylinder longer than the stroke, and using a double headed piston, the space between e two heads of the piston being kept supplied with steam from the boiler. In single acting engines one de of the piston is kept in free communication with the full pressure steam, while the working steam acts ith more or less expansion on the other side of the piston.

3. Propelling an independent flying piston by a puff of steam rapidly from one end of cylinder to nother, where it meets with the piston proper, which is connected with a crank and appendages for tary motion. The cylinder is then opened to the condenser, and both pistons descend together, when e piston proper afterwards rises, the independent flying piston is left at the bottom of the cylinder, and hen the piston proper has arrived at the end of its stroke the flying piston is again by a puff of steam opelled rapidly up to it.

[Printed, *8d.* Drawing.]

A.D. 1868, July 18.—N° 2265.

HOMAS, JOHN.—"Improvements in furnaces for smelting and melting."

The novelty mainly consists in the employment of water boshes supplied from hollow columns and formed l over their inner side with spikes; the boshes are lined against the spikes with mortar or other refractory aterial. The lining is held up by the spikes and kept cool by the water in the boshes, so that it cannot fluxed away.

[Printed, *10d.* Drawing.]

A.D. 1868, July 18.—N° 2266.

ERRY, WILLIAM.—"Improvements in the means or apparatus for lighting shops, rooms, and other places from the outside of the building by gas, oil, or other illuminating materials."

My invention consists in attaching to the outside of a building near the windows or shop front the paratus in such a position that it can be drawn down, raised up, or drawn across the front of the window building for the purpose of reflecting light through the agency of gas, oil, or other illuminating materials. may be fixed or moveable.

The apparatus consists of a case made of glass, wood, and metal or other suitable material, in which is ted pipes and jets for conveying and burning gas, or cups or other vessels for burning oil or other uminating materials.

This apparatus may be used as a means of advertizing the name and business.

[Printed, *8d.* Drawing.]

A.D. 1868, July 18.—N° 2267.

STEINBACH, Frederic Chomé.—(*Provisional protection only.*)—"An improved joint for metallic pipes "for conveying fluids and liquids."

Connecting pipes by using molten metal run into ring grooves as a cement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 18.—N° 2268.

LAKE, William Robert.—(*A communication from Frederick R. Pike.*)—(*Provisional protection only.*)—"Improvements in propelling machinery for canal boats and other vessels."

My improvements relate to propelling vessels in water by means of a reciprocating propellor, which may be either a simple piston or plunger working in a cylinder or case, or may be formed with leaves or wings which open as the piston acts upon the water and close when it is drawn back. The propellor is worked by a horizontal or inclined engine connected to the short arm of a lever which has a long arm connected to the propellor.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 20.—N° 2269.

BONELL, Thomas.—(*Provisional protection only.*)—"Improvements in slide valves of steam engines."

The object of the invention is to relieve the valves of the pressure of steam on the back of them by the application thereto of frames capable of sliding on such valves and against the centre plate. These frames are formed with V or wedge formed edges, acted upon by springs between such pieces and the valves.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 20.—N° 2270.

BARLOW, Henry Bernoulli.—(*A communication from Eugene Huret and François Louis Debruys.*)—"Improvements in machinery for preparing, spinning, and doubling cotton and other fibrous substances."

This invention is applicable to slubbing and roving frames and to machines for spinning and doubling, and it consists in an improved mode of driving the spindles of such machines by friction, and of arresting the motion of any spindle in a machine without interfering with the working of the other spindles.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 20.—N° 2271.

GRAY, Thomas Wood.—"Improvements in lightning conductors."

This invention consists of a system of lightning conductors to vessels of the composite build of wood and iron, also to those vessels of iron with wood masts. In the case of a composite vessel, fitting the hull so as to avoid all contact with iron over wood or other non-conducting materials; and in the case of iron vessels with wood masts, the conductors fixed on the upper deck direct over board.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 20.—N° 2272.

WINTER, William.—"Improvements in sewing machines."

The novelty consists in,—

The construction, application, and use of self compensating levers for working the needle bars and shuttle drivers of sewing machines, or levers so constructed as to compensate for the wear of the joints or connecting parts thereof.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 20.—N° 2273.

CUNNINGHAM, William John.—"Improvements in means or apparatus for raising and lowering "window blinds, curtains, and other articles."

An india rubber band is slung on a hook or nail in the wall or otherwise, the other end of which band is enclosed by a hook round which the cord works, or the said band may be enclosed in a hook attached to a pulley round which the cord works.

[Printed, 6*d*. Drawing.]

A.D. 1868, July 20.—N° 2274.

BEANES, Edward.—"Improvements in brewing."

My invention for improvements in brewing consist in the use of sulphurous acid in the state of gas or its aqueous solution, or of sulphite or bi-sulphite of soda, potash, or lime, or any other salt of sulphurous acid he brewing materials (malt or sugar) either before their entrance into the mash tun, during the mashing or before or during the boiling of the wort with the hops, but I prefer to use the acid or its salt during the mashing process.

4*d.* No Drawings.]

A.D. 1868, July 20.—N° 2275.

Robert.—(*Provisional protection only.*)—" Improvements in apparatus for propelling vessels."
roved apparatus comprises a kind of paddle-wheel arranged by preference on a vertical shaft in a ned in the vessel's side, and there is a similar paddle-wheel on each side of the vessel. The the paddle-wheel consists, by preference, of two discs and a series of spindles parallel to the shaft veen and are carried by them. Each spindle has a pair of short arms fixed on it close to the he discs, and a paddle or float is fitted with journals turning in the ends of the arms so as to turn parallel to the spindle, such axis being at or near one edge of the float. When the float is pressed tion it bears against the spindle, but is otherwise free to assume the position of least resistance. ns of the spindles and their arms are in one modification controlled by cranks formed or fixed on ends outside of the disc, the pins of the cranks being entered into holes in a third disc mounted n on a boss disposed eccentrically as regards the paddle-wheel shaft. The paddle-wheel projects f the casing, and as the floats are carried by it out of the casing they assume positions at right e vessel's course so as to propel in the most direct and effective manner whilst when they are nd through the interior of the casing they offer the least possible resistance.

er modification each float is fixed at or near one edge on the spindle, and arms or cranks on the fitted with antifriction rollers, which are acted upon as the paddle-wheel revolves by cam grooves ed in the casing.

4*d.* No Drawings.]

A.D. 1868, July 20.—N° 2276.

Charles Pollock.—" An improved counting machine and numerical recorder."
ng of a number of discs or elements placed side by side upon a shaft, and having numbers stamped marked on their outer periphery ; on the internal periphery of these discs or elements are teeth gear teethed wheels worked by eccentrics so as to give them a rocking motion. The first fixed to the shaft, the second to the first disc or element, and the third eccentric to the second ent, and so on with any number of elements.

parata may be constructed to record the number of revolutions of a shaft or to record in various printing successive numbers on tickets or otherwise.

8*d.* Drawing.]

A.D. 1868, July 20.—N° 2277.

homas Goodwin. — (*Provisional protection only.*) — " Improvements in the preparation or ure of a composition intended to be used in the manufacture of earthenware, porcelain, or vitreous

ing what the applicant terms Staffordshire stone (a substance mineralogically known as Talcose ng composed of quartz and steatite) in making compositions for the above purposes. This being wholly or partially substituted for Cornwall stone.

4*d.* No Drawings.]

A.D. 1868, July 20.—N° 2278.

uchlan.—" An improved aërated liquid or artificial champagne."
lime or lemon juice and making it into a strong syrup ; afterwards aërating it and adding a or brandy.

4*d.* No Drawings.]

A.D. 1868, July 20.—N° 2279.

obert, and DANIELS, George.—" Improvements in engines or machines for driving drums, h apparatus for cultivating land by steam power, in drums for the same, and in apparatus for the machines from place to place."

t part of this invention consists in mounting a boiler, which is by preference set vertically on a rriage, supported by wheels, to enable it to move from place to place. The engine is set by the boiler, the cylinder of which may be vertical or horizontal, and communicates motion, as here- ibed, to the winding capstan or drum, which is also supported by the same frame as the boiler.

ond part of this invention consists in the employment of a capstan or drum, which is capable of being adjusted so as to adapt its position to readily receive the rope, and this is accomplished in the following manner:—

The drum is mounted upon a shaft, which is supported at top in the frame of the machine, but free to oscillate therein; the shaft passes through the drum, and its position is regulated by a set screw working in a frame below, so that by turning the screw the drum may be set at any angle that may be desired for the efficient working thereof; viz., for winding thereon the wire or other rope to haul a plough or other implement.

The drum is driven from the crank shaft of the engine, to which a bevil pinion is keyed, in gear with another, and similar bevil pinion on a horizontal shaft, carrying another pinion in gear with a bevil wheel on the drum. The latter pinion is capable of being allowed to run loose on the shaft when it is not required to drive the drum. Sometimes, instead of using the bevil pinions before described, motion is imparted to the horizontal shaft by a strap or straps from the crank shaft of the engine.

The apparatus for moving the machine from place to place along the headland, for example, consists of a drum or wheel to receive a wire or other rope on each or either end thereof; the drum, which may be made in one or several parts, is fitted with cogs or teeth, and motion is imparted to it by a worm on the horizontal shaft of the machine; a clutch is provided for throwing the worm in or out of gear with the teeth on the drum, according to whether it is desired to drive the drum, or to allow it to remain at rest.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 20.—N° 2280.

RAINE, Joseph.—(*Provisional protection only.*)—" An improved method of and apparatus for obtaining " panoramic pictures by means of photography."

The photographic camera is divided into two or more equal parts by means of a vertical division, consisting of a band with serrated edges so adjusted as to soften the edge of the picture, permitting the picture taken in the adjoining division to join that previously taken without a visible junction, the camera having been moved or rotated a sufficient distance horizontally to permit of the subjects in the margin of the picture overlapping.

By suitable pulleys the band is made to revolve while the picture is being taken.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 20.—N° 2281.

HODGSON, Charles.—" Improved means of and apparatus for transporting loads."

This relates to that class of apparatus for transporting mineral or other produce or loads which consists in transmitting such produce or material contained in a suitable vessel or carriage along a rope or wire stretched between two fixed points, and the improvements consist in so arranging the supporting points of such rope or wire, and so constructing the pulleys, sheaves, or wheels, which suspend the vessel or carriage, that the said pulleys shall be capable of passing the supporting points of the rope or wire without hindrance, thus enabling the wire to be supported at any required number of points, and thus establishing a continuous communication for any desired distance; and also in combining with the employment of a pair of fixed wires or ropes placed side by side the use of a continuous endless rope or wire passing round pulleys or sheaves placed near the extremities of the fixed wires or ropes, and capable of receiving motion from the revolution of these pulleys or sheaves, which revolution is to be caused by the application to them of any suitable power.

[Printed, 1*s*. Drawing.]

A.D. 1868, July 20.—N° 2282.

BATES, William Henry, BATES, Alfred Mason, and FAULKNER, Hugh.—" Improvements " in the manufacture of flexible tubes or hose."

In making flexible tubes a core of india rubber which is capable of being stretched or extended longitudinally is used. This extension reduces its diameter and allows of its being more easily withdrawn from the interior of the tube than the cores now employed.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 20.—N° 2283.

HOMFRAY, Alfred.—" Improvements in separating coal, cokes and breezes from bats and other impuri- " ties, and in machinery or apparatus to be employed for that purpose, which improvements and machinery " or apparatus may be applied to the separation of various other substances."

This invention consists in separating coal and bats or other substances by screens and troughs. The screen first used is inclined and has a step like figure with openings between the step. The coal being put on the top of the screen descends the pieces of coal bound over the opening at the bottom of the first step and fall upon the second step, while the bats being flat do not acquire sufficient velocity to reach the second step and fall through the opening at the bottom of the first step. Transverse bars may be employed still further to arrest the motion of the bats and cause them to fall through the openings. Any number of these steps may be employed. The bats may be afterwards washed in troughs to separate any small pieces of coal that may have fallen with them. The washing is effected by a jet of water which carries the coal over a bar in the trough while the bats are retained by the bar. The coal and lighter portions of bat are finally treated by another screen which has additional bars, by striking against which flat pieces of coal or bat are made to fall through the screen.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, July 20.—N° 2284.

WEEKES, Charles.—"Improvements in the application of iron for building purposes, and in the means of connecting the same, particularly applicable to fortifications."

The novelty consists in the use of iron in the form of a simple building material that is in the form of ordinary bricks, the bricks being either of cast, wrought, or chilled iron or steel, of any size or shape required and built in bond as brickwork or used as facing to or in conjunction with masonry, brickwork, on concrete, or as backing to armour plates, or in fireproof constructions, the bricks being either solid or hollow as required and laid in iron or other cement, and may be fastened with hoop iron bands if desirable substantially as stated in Provisional Specification.

[Printed, 10*d.* Drawing.]

A.D. 1868, July 21.—N° 2285.

REEN, Fitzowen.—(*Provisional protection only.*)—"Improvements in lamps for burning benzine and other volatile oils and spirits, also applicable for burning non-volatile oils."

This invention consists in constructing lamps, more particularly applicable to railway carriages, consisting of a long closed vessel, at each end of which is an over-flow pipe leading to a reservoir below the carriage. The vessel is filled through a tube rising up through the roof of the carriage and carries on its upper surface one or more burners having a cup near the upper end for receiving a small quantity of spirit which being ignited volatilizes the oil and enables the same to be readily lighted.

The lamp may also be used for burning paraffine and also non-volatile oils by means of an ordinary wick burner. The wick is regulated by a rod passing through the roof of the carriage.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 21.—N° 2286.

OHN, Tobiaz.—"New (or improved) machinery for cleaning and finishing silk, worsted, and other threads."

The object of my invention is to obviate the defects of the machinery heretofore used for finishing threads and also to perform successively and in continuation by machinery the several operations of twisting, macerating, cleaning, and winding into skeins or on to spools silk, worsted, cotton, linen, and other threads that require to be so treated. The threads are wound on spools on the spindles of flyers, and pass therefrom over or through guides which may be placed in a vat of macerating liquid. From these guides they pass through other guides to the reels on which they are wound. The threads are finished by the frictional action of rubbers which consist of round rods or bars set in suitable holders. I prefer to mount the rubbers in two carriages operated by cranks, the said carriages acting in opposite directions and in combination with one or more flyers and reels. The rubber carriages are provided with stops, whereby the two rubbers acting in opposite directions on one thread can be stopped and started at the end of the throw of the crank. Series of rubber carriages are arranged on opposite sides of the driving shaft, those on the same side having motion in opposite directions, thereby balancing the several parts and causing the machine to work with little vibration. The thread can be wound around the guides to give it any desired resistance for stretching while being acted on by the rubbers. Concave faced rollers may also be employed for finishing or cleaning the thread, such rollers being arranged alternately at right angles or nearly so to each other to counteract the tendency of the threads to move lengthwise of the rollers.

[Printed, 1*s.* Drawings.]

A.D. 1868, July 21.—N° 2287.

ESCHAMPS, Theodore.—"An improved fastening for gloves."

A plate with two apertures, one for securing it to the glove, the other forming an eye or loop is attached to the thumb side of the glove. On the opposite side one end of a lace or tape is attached to the glove and the other carried through two slits in one end of a plate which serves as a clasp, the other end being furnished with a hook and is terminated by a knot or tassel.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 21.—Nº 2288.

WARREN, Frederick. — (*Provisional protection only.*) — " Improvements in apparatus employed for " heating water for conservatories, baths, and private and public buildings."

1st. Making the boiler or heater of rings and converging arms.

2nd. Putting this boiler, when required, in a case or stove so as to make a portable hot water apparatus that shall be completed in the workshop and sent out ready for use.

3rdly. Utilizing the waste heat for warming supply water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 21.—Nº 2289.

WILLE, Alphonse Abraham, generally known as **Wille ALPHONSE.**— (*Provisional protection only.*) —" Improvements in bleaching or extracting the colour from feathers."

This invention consists in bleaching feathers by first washing them and then steeping them for about three days in a luke-warm bath composed of water, muriatic acid, chromate of potash, sulphate of copper, and sesqui-oxide of iron. The feathers are afterwards washed with soap and rinsed, and then steeped, first, in a boiling solution of salt of sorrel, and, lastly, in a cold bath of starchy water with a small admixture of blue and pink colouring matter.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 21.—Nº 2290.

HECTOR, John Marsden.—" Improvements in fusee boxes and in mechanism connected therewith."

Consisting of a box which, when opened by means of mechanism fitted to the interior, projects a fusee from the box when desired.

If desired the mechanism may be made to project the fusee in a state of ignition.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 21.—Nº 2291.

ASTON, James Jones.—(*Provisional protection only.*)—" Improvements in paddle wheels."

Improved paddle wheels, floats being curved or angled from the inner ends.

[Printed, 1*s*. Drawings.]

A.D. 1868, July 21.—Nº 2292.

CLARK, Alexander Melville.—(*A communication from Charles François Thibault.*)—" Improvements in " apparatus for feeding steam boilers and liquid or fluid reservoirs, partly applicable to pumps."

The improvements relate, 1st, to an hydraulic feeder interposed on the suction pipe of the feed reservoir, consisting of a cock having a valve and stem connected to the float. When the water falls the float raises the valve and allows the feed pump to take in water, and when the water rises with the float the valve falls and cuts off the supply when desired.

The second improvement consists in providing the feed pump with a self acting purge cock having a valve which rises at each return stroke of the piston and allows of the escape of an intermittent jet of the fluid or liquid contained in the pump. This purge cock further has a screwed stem to regulate the jet and enable the cock to be readily cleansed of all deposits.

This purge cock is also applicable to other pumps.

The third improvement relates to the float which is connected to an oscillating axis by a stem received in a forked lever. The oscillating axis is provided with an index hand weighted at one end for balancing the float. An alarm whistle is also connected to this float.

The fourth improvement relates to the combination of a series of generators with the self acting feed apparatus applied. I apply a pipe in the head of each boiler with a cock, and connect the whole by another pipe in communication with a float chamber, the water in which is at the same level as in the boiler, so ensuring a constant and uniform supply to all.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, July 22.—N° 2293.

B, THOMAS.—“Improvements in the treatment of metallic ores and compounds.”

the first instance a portion of the ore under treatment is calcined, a reverberatory furnace heated by a t one end being well adapted for the purpose. The ore containing sulphur is placed on the bed near re-bridge and calcined in a current of atmospheric air until the sulphur is expelled. It is then moved rds the flue end of the furnace, which is at a lower temperature, and a fresh charge of ore placed on the r portion of the bed. The sulphurous acid gas produced in calcining the latter charge passes in mixture the excess of atmospheric air over the previously calcined ore, and changes the oxides of copper or other l contained in the latter into sulphates.

rinted, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2294.

TIN, GEORGE.—“Improvements in the manufacture of extract wool, and in the process and apparatus ployed in destroying the vegetable material in mixed fabrics, which apparatus is applicable to other rposes.”

e rags or materials to be operated upon are placed in a stove or chamber, by preference in the apparatus nted by the applicant, and for which Provisional Protection has been obtained by him, dated the 18th of March 1868, No. 919. The chamber is made air-tight or nearly so, and a vacuum or partial vacuum ed therein. Gas, vapour, or steam is allowed to enter the chamber from a generator placed in connection with, the chamber having been previously or during the operation heated to 150° or 200° Fahrenheit. his treatment all vegetable fibre contained in the rags or materials will be destroyed. The gas, vapour, eam may be exhausted and collected, after which a current of atmospheric air is allowed to pass into the ber to purify the materials.

r bleaching purposes the rags or materials may be subjected to the influence of sulphur vapour admitted the chamber.

Printed, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2295.

DSHAW, CHARLES WILLIAM.—(*Provisional protection only.*)—“Improvements in coupling hose for am and fire engines, gas and water pipes, hydrants, and other similar purposes.”

e principle of this invention consists of the joining of fire hose, water, and other pipes by means of a and female socket so arranged that a ring introduced between the two before joining, upon which ring tric grooves are formed which act upon two wedge like pieces of metal introduced in openings formed female socket; by turning the ring before mentioned the wedges are drawn in and close upon a bevel male socket, and thus form a secure and watertight joint.

rinted, 8*d*. Drawing.]

A.D. 1868, July 22.—N° 2296.

NSON, JOHN HENRY.—(*A communication from Alexander Clavel.*)—“Improvements in the production red coloring matter.”

s invention relates to the production of a red colouring matter from and by means of a substance or ct derived from napthaline, and which I consider to be isomeric with napthylamine. This substance duct may be obtained by acting upon napthaline by means of nitric acid, and after separation of the cid from the nitro-napthaline or the product thus resulting, it is subjected to the reducing action of either r iron or other reducing agent in conjunction with an acid, by preference acetic acid. The result of educing process is collected and placed in a retort or other suitable distillatory apparatus, or napthy- e prepared by other processes may be substituted and be submitted to a distillatory process. On the ation of the necessary degree of heat nathylamine will first pass over, and subsequently at a higher rature the substance or products which I consider to be isomeric with napthylamine are obtained, and may be collected in a separate receiver. The isomeric substance or product thus obtained is then acted upon at a temperature of about 120 degrees centigrade with acetic acid, by preference crystal- e, and with a nitrate, by preference nitrate of soda, and to this mixture or to the substance thus upon I add napthylamine and allow the mixture to remain at or about the temperature indicated the desired color has been produced. I then remove the same, and after having subjected the crude ials to the action of water, and then to the action of hot water containing an acid, by preference acid, the coloring matter is obtained in solution, from which it may be separated either by means mmon salt or otherwise, as is well understood by manufacturers of aniline colors. The coloring matter thus obtained may be dissolved in alcohol or other solvent, and may be employed for the purposes of dyeing and printing.

The proportions in which the several before mentioned substances may be employed will vary, but I have found that good results may be obtained by employing the product which I have called the substance or product isomeric with napthylamine, acetic acid, a nitrate, by preference nitrate of soda, and the napthylamine in about equal parts by weights, but I do not confine myself to these proportions.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2297.

LANGDALE, Sampson.—(*Provisional protection only.*)—"Improvements in the preparation of artificial "manures."

My invention relates to an improved means of effecting the solution or decomposition of phosphatic minerals or compounds, such as mineral phosphates of lime, coprolites, or other natural products, and consists in subjecting them when by preference in a divided condition to the action of sulphuric acid at an elevated temperature. By employing sulphuric acid at or about its boiling point the decomposition of the phosphate will be much facilitated, and the solution of certain compounds of iron which may be present will be prevented or diminished. The sulphuric acid may be heated either by means of a fire under the boiler or decomposing vessel, by means of high pressure steam or superheated steam, which I prefer, or by any other convenient arrangement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2298.

TASSIE, Peter, and PATCHETT, Isaac.—"Improvements in machinery or apparatus for plaiting, "folding, or lapping textile fabrics, paper, pattern cards, or similar materials."

The material to be folded is passed over rollers between knives and entered between a clamp, and when the machine is set to work the knife corresponding with another clamp carries the material forward and places it in the clamp. As the slide is traversing in the other direction the first clamp is opened to release the material and allow the second knife to bring forward the material and enter it into the corresponding clamp, and so on, continuously placing the material in the clamps, and releasing it from them as the knives move to and fro, thereby plaiting, folding, or lapping the material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2299.

HAMILTON, William Tighe.—"A dovetailing machine."

The feature of most novelty in this invention is the use of a circular saw to cut (or eat) away the dovetails, by throwing its operation into the form of a triangle.

This is done by mounting it either upon a universal joint carried by a reciprocating axle, or upon a fixed mounting as for what is called the drunken saw.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2300.

WALDO, Charles Forster.—(*A communication from Charles Johannson.*)—(*Provisional protection only.*)—"A new method of and new apparatus for raising, moving, transferring, and discharging water or other "fluids."

Pumping water without a pump or any driving engine, that is to say, what is equivalent to "pumping," the drawing of water into and ejecting it from a chamber or vessel. By the direct application of steam, first by the vacuum resulting from its condensation causing the water to rush into the chamber or vessel, and then by the direct application of the steam pressure to the therein contained water, causing the same to be ejected therefrom. So that with only a steam boiler and its steam and the apparatus of the chamber or vessel for condensing the steam, receiving and expelling the water, all can be accomplished in the way of lifting or moving water that is now effected by the system of suction-pumps so called and of an engine to drive them. Or as it might, in the language of this invention, be expressed, the water is "rammed" instead of "pumped," and this is done with equal if not greater efficiency and with very great simplification of apparatus.

[Printed, 1*s*. Drawings.]

A.D. 1868, July 22.—N° 2301.

HAMILTON, William Tighe.—"An improved method of converting circular into reciprocating "motion."

el feature in this invention is the use of an inclined disk, which forces the axle on which it is
o reciprocate as it revolves, or conversely which forces another object to reciprocate, the axle being
o rotate.
, 4*d.* No Drawings.]

A.D. 1868, July 22.—N° 2302.

Louis.—" Improvements in drying and beating all kinds of threads, and in combining apparatus
purpose."
eads are placed on bars in the form of hanks, one bar being jointed so as to fall inwards and
during the rotary motion of the machine for the purpose of "beating" the threads simultaneously
rying, which is obtained by disposing said bars and hanks on a number of radial arms forming
en at the centre to air chambers heated if desired, whereby the threads are dried, 1st, by the
force produced by the rotary motion of the machine; 2ndly, by the vacuum or rarefaction of the
by the current of air; and, 4thly, by heat.
, 1*s.* 2*d.* Drawings.]

A.D. 1868, July 22.—N° 2303.

, Sidney Hopton.—" Improvements in decorticating wheat, and in apparatus to be used for
ating wheat and other grain."
ovisional Specification describes a decorticating apparatus which consists of a box open at top and
ottom with a revolving agitator or rubber working in it. The grain is fed in at the top, and after
ected to the rubbing action passes out through holes near the bottom and at the side of the box.
decorticating wheat by what is known as the wet process drying the moist husk by placing
husk and grain as it comes from the decorticating machine either into sacks or keeping it in bulk
in order that the grain may absorb the moisture from the husk instead of employing drying
r drying floors to effect this object as heretofore.
, 8*d.* Drawing.]

A.D. 1868, July 22.—N° 2304.

Thomas Arthur, and WHALE, Henry.—(*Provisional protection only.*)—" Improvements in
ats."
elty of the invention is the use of cane to make the racket bat hoop instead of ash or other

is that cane will not break so easily, consequently much more durable than other materials.
, 4*d.* No Drawings.]

A.D. 1868, July 22.—N° 2305.

N, Clinton Edgcumbe.—(*A communication from Friederich Von Martini.*)—" Improvements in
oading fire-arms."
ech block is hinged to the stock and has a curved hollow at its top which when the cartridge is
in line with the bore; it also carries the explosive mechanism and the extractor, which latter
side of the cartridge to extract it. Two levers centred on the same pin hold up the breech
keep the trigger from acting when loading. The cartridge cannot be exploded till the breech block
.
, 10*d.* Drawings.]

A.D. 1868, July 22.—N° 2306.

Thomas Freeman, FIRTH, Josiah, FIRTH, Charles Henry, and FIRTH, Edwin.—
ments in looms for weaving."
port of our invention is to weave carpet goods (more especially) where considerable variation of the
uired.
end two treadles are used, each of which communicates by means of an overhead lever with an
nt to be described.
he loom and over the healds is mounted a small frame-work provided with a horizontal "card
" on either side, between each cylinder and the framework hang a series of vertical metal plates
onnected to a cross bar, and so placed relatively to each " card cylinder " that upon any given peg
ylinder coming in contact with any one of the metal strips it yields inwards or towards the frame-
so presses a horizontal pin (having an oblong slot in its centre part) through which passes a
ttened needle or "tabbie," the lower end of which is connected to one of the healds (by means of

cord), whilst the upper end (which has a hook formation) is connected by a cord passing over a friction pulley swinging from the top of the framework to an adjoining needles and consequently heald. On either side of the two rows of needles connected as before named to their relative healds, passes a horizontal lever having its fulcrum in the front part or side of the loom, and connected with the treadle lever arrangement before referred to. Each of such horizontal levers is raised and permitted to fall by its respective "treadle" connection at the will of the weaver and in connection with such horizontal levers are vertical catch levers which act upon the card "cylinder," and cause them to make the requisite portion of a revolution. By so doing pegs of the "card cylinders" press upon the metal slips referred to, which in turn press upon the horizontal pins named, and thus cause the needles or "tabbies" to incline (that is to say), not allow the respective horizontal levers alluded to to catch them (by reason of their hook formation) in their ascent. By this action that portion of the warp not required to be in "shed" is left down, whilst other portions as required are raised accordingly.

We may here add that another vertical catch lever is placed upon the opposite side of the card cylinders and when it is required to "back" the loom in consequence of a flaw or from other reason. In the bottom part of the loom and under the healds are placed a double series of levers (each series having reference to its own treadle) swinging on central fulcra and connected at either end by means of strings with the under sides of the healds, each end being connected to separate but contiguous healds with the object of assisting the upper portion of the apparatus in its functions.

By the above arrangement the weaver is enabled to change the required part of the shed (the remainder being stationary and both treadles being down whilst the shuttle is passed through the "shed") by raising the foot on the side requiring to be changed and then pressing down again, the card cylinder being acted upon, and a fresh "shed" made when the foot is raised.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, July 22.—N° 2307.

FEAR, HENRY.—(*Provisional protection only.*)—" Improvements in door springs and spring hinges."

This invention relates principally to double action box door springs.

According to one arrangement the axis on which the door turns has a double incline upon it on which a roller at the bottom of a vertical slide bears, flat springs pressing down the slide. On opening the door one or other of the inclines raises the slide, which when the door is at liberty to move is pressed down and the door thereby closed.

According to another arrangement a double cam on the axis of the door acts against a horizontal slide against which a weighted lever bears. When the door is opened the weighted lever is raised, and by its pressure against the slide closes the door.

According to another arrangement a short arm on the axis of the door is caused to act upon one or other of two arms, and thereby effect the coiling up of a spring the tension of which brings back the door to its closed position. By means of a ratchet wheel and pall the tension of the coiled spring may be adjusted.

This arrangement is applicable to single action door springs and to single and double action spring hinges.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2308.

HAMBLETON, FRANCIS HENRY.—" Improvements in the manufacture of laminated armour plates and " other forgings composed of sheets or bars of iron or steel welded to one another by rolling."

This Provisional Specification describes the forging armour plates and other forgings by suspending the plates or bars of which they are to be composed in a furnace at a small distance apart the one from the other, and then welding them together by drawing them up vertically through rolls.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 22.—N° 2309.

DENNIS, WILLIAM.—(*Provisional protection only.*)—" Improvements in letter boxes, letter pillars, and " such like repositories."

As regards letter boxes the improvement consists in constructing the box with or without a fan wheel at the aperture and dividing the box at about the centre thereof with two pieces of metal of a triangular form somewhat similar to the letter V and either with or without a flap joint near the point thereof.

And as regards letter pillars the improvement consists in employing a bag to receive the letters, and in causing the opening of the doors of the pillar to close the mouth of the bag so that the letters therein may not be tampered with, and the bag can only be opened at the head quarters of the post office.

ther mechanical contrivances are employed to prevent the introduction of any instrument at the flap ough which the letters are passed from the outside into the pillar to prevent extraction of the letters.

nother improvement consists in connecting the flap of letter pillars with a signal or disc to shew if the is open so as to prevent wedging or otherwise keeping the flaps open for any length of time by dishonest sons for the purpose of extracting letters from the inside of the pillar.

[Printed, 4d. No Drawings.]

A.D. 1868, July 23.—N° 2310.

WRON, JAMES, and LUNGE, GEORGE.—" Improvements in the manufacture of iron and steel."

his invention consists in the use of fluoride of calcium in the blast, puddling, or other furnaces employed he manufacture of iron and steel for the purpose of removing the phosphorus combined with the materials ler treatment.

[Printed, 4d. No Drawings.]

A.D. 1868, July 23.—N° 2311.

CHAN, ADAM.—(*Provisional protection only.*)—" Improvements in the construction of ploughs."

he sole of the plough is very much reduced in length, and immediately behind the same is placed a tical wheel which carries the weight of the plough and removes the friction of the sole on the ground. hind the vertical wheel is a smaller wheel, which revolves horizontally and takes the place of the side plate rdinary ploughs, and thereby the lateral friction is materially reduced.

[Printed, 4d. No Drawings.]

A.D. 1868, July 23.—N° 2312.

GHES, EDWARD THOMAS.—(*A communication from Lewis McDonald Hills.*)—" Improvements in the ode of treating flax, and in apparatus employed therein."

he object of this invention is to remove the glutinous matters enveloping the primary or cell fibres of so that they can be more readily separated from each other by picking, carding, or other suitable chinery; and the invention consists in passing the flax through water heated at different temperatures at erent stages for several hours by means of an arrangement which will hold the flax so as to pass it ough the water as often as required; then after such water treatment is treated in like manner by various mical operations whereby the flax is dressed in the most perfect manner.

[Printed, 10d. Drawings.]

A.D. 1868, July 23.—N° 2313.

LBERT, WILLIAM.—" Improvements in lockets."

his invention consists in making the frame which carries the miniature or article to be held in the locket ned out of the case at the side instead of making the locket open by a lid or cover as usual. The case and me of the locket are each made from one blank or piece of sheet metal, having the figure of the two sides he case or frame joined at the middle by a narrow strip or band. The case and frame are folded at the nds or strips, and are fixed together by the suspending ring of the locket, upon which the frame turns as entre.

[Printed, 8d. Drawing.]

A.D. 1868, July 23.—N° 2314.

ARSON, PETER.—" Certain improvements in the treatment and preparation of cocoa."

he novelty of the invention consists in combining a concentrated liquid extract obtained from " cocoa uts " or " nibs " with a certain portion of cocoa from which the fatty matter (or " cocoa butter ") has n previously extracted, and if desired alcohol or other preservative agent may be added for the purpose keeping such liquid compound.

[Printed, 4d. No Drawings.]

A.D. 1868, July 23.—N° 2315.

RT, THOMAS.—(*Provisional protection only.*)—" Improvements in machinery employed in the manu- cture of banding cords, or twine, from cotton, hemp, flax, or other fibrous materials."

his invention relates to the use of a carriage and tramway, and " stakes " or bearers having arms ched, in the notches of which the strands are deposited as the carriage passes, and a second-arm for ng the said strands clear of the said notches, and combining two or more for the purpose of being bled.

[Printed, 4d. No Drawings.]

A.D. 1868, July 23.—N° 2316.

HORNER, Frederick.—(*Provisional protection only.*)—" Certain improvements in the manufacture of " chandeliers, bedsteads, tin and iron cans, kettles, and pans, and such other domestic articles as have " hitherto been made of expensive metals, such as copper and brass."

The novelty of the invention consists in the application of copper to the exterior surface of an inferior or base metal, of which I propose to manufacture or construct such articles. For example, a chandelier now made of brass may be made of cast iron, and a coating of copper may be applied thereto by means of electrotyping apparatus, and the surface of copper deposited may be polished, or if required to resemble brass the application of brass lacquer will effect the object.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 23.—N° 2317.

HARRISON, William Samuel.—" Improvements in the construction of clocks or other timekeepers, " and in the method of and apparatus for regulating and setting them by the aid of electricity."

The object of this invention is to enable a motor or regulator clock which keeps true or normal time to correct or regulate any convenient number of other clocks or timekeepers at a distance therefrom by means of a current of electricity which is caused to pass during the last few seconds of each hour from the " motor " or regulator to the other clocks, detaching the hands from the " going " mechanism, and unlocking the fly by a special movement which sets the minute and second hands backwards or forwards to the exact hour, holding them in that position until the moment the motor or regulator indicates the precise completion of the hour; when the latter breaks electrical contact, unlocking all the hands of the other clocks simultaneously and throwing them instanstantly into gear with the going mechanism, so that the starting of all the clocks each hour shall be absolutely synchronous and in perfect accordance with the time indicated by the motor or regulator clock.

[Printed, 1*s.* Drawing.]

A.D. 1868, July 23.—N° 2318.

SHAW, Matthew Turner, and HEAD, Thomas Howard.—" Improvements in hydraulic apparatus ' for lifting, hauling, and lowering."

This Provisional Specification describes modes of obtaining variations of power from the hydraulic cylinder or cylinders of lifting or other apparatus. It also describes an improvement in the turning gear of hydraulic cranes.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 23.—N° 2319.

PURDEY, James.—" Improvements in fire-arms."

A moveable and adjustable elevation of the breech is obtained by adapting to the tang a moveable plate, the fore end of which may be elevated by a screw cam or wedge.

[Printed, 6*d.* Drawing.]

A.D. 1868, July 23.—N° 2320.

BROOMAN, Clinton Edgcumbe.—(*A communication from Jean Vander Hielakker.*)—(*Provisional protection only.*)—" Improvements in rotary steam engines."

This consists in causing the steam to enter through a hollow axle into a cylinder or disc fixed on the axle, and enclosed in a fixed casing, which is provided with stops forming compartments with the cylinder or disc. The steam passes through apertures in the cylinder or disc, and striking against stops causes the cylinder to revolve by its reaction. It escapes through other apertures placed by the first to the centre of the cylinder, and passes out of the machine by the other end of the hollow shaft or axle, causing in escaping an equal and similar impulse to that it produced on entering.

Another arrangement is described in which the steam enters by a pipe placed on the fixed casing.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 23.—N° 2321.

KILNER, John.—(*Letters Patent void for want of Final Specification.*)—" An improved method of and " apparatus for manufacturing glass."

Application of a reverberatory furnace in which the fire is at one end of the bed or floor on which the materials for fusion are placed, and the chimney is at the other or opposite end.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 23.—N° 2322.

AD, Joseph Sykes, and WHITMEE, Joseph.—" Improvements in dry gas regulators."
ncipal features are the external screwed flanges and consequent additional security to the dia-
nd also the increased inflating surface thereby attained.
ening of the weight and bulk in the process of manufacture being also a great advantage.
-wood or ebony guide, saturated with oil, for the valve-rod to slide through, entirely preventing
and thus reducing friction to a minimum, is also a leading feature.
regulators, the direct action of the valve on the one hand and the principle of percolation (as
gas) on the other, are new features, and may be designated " pressure or quantity regulators."
, 6*d.* Drawing.]

A.D. 1868, July 24.—N° 2323.

LTZ, Auguste.—" Improvements in self-acting valves by the use of compressed air."
ct of this invention is the saving or prevention of the waste of motive power in self acting valves
and such like machinery by means of compressed air, the apparatus acting as a regenerator of
ver.
aratus may be variously arranged, but in a normal case in which the main pump rod is of exactly
corresponding with the average power necessary for working the pumps and the initial pressure
bove and below the piston is required to be equal; a cylinder, the interior of which is smoothly
rovided, the same being closed by covers at its two ends. In this cylinder is placed a piston
with a piston rod which passes through stuffing boxes and is firmly attached at one or both ends
 pump rod. Each end of the cylinder communicates with an air chest, each of which is furnished
cock and with a safety valve. The cylinder being first filled above and below the piston with
c air, and the pump rod commencing to move upwards, by opening the lower air cock the outer
ter under the piston, so that on the latter reaching the highest point of its course all the
on of the cylinder will be filled with air. On the other hand, air contained in the upper part of
r becomes more and more compressed and acquires a density in the inverse ratio of its original
volume. When the main pump rod and with it the piston of the power regenerator descends the
he piston dilates and assumes its original density when the piston has reached the lower limit of
hilst the air under the piston becomes compressed, and becomes equal to that of the air above the
ing its upward stroke, and if the volumes of air are equal on each side, the main rod will be
eved, and the object of employing the regenerator accomplished.
, 10*d.* Drawing.]

A.D. 1868, July 24.—N° 2324.

D, Robert Griffith.—" Improvements in sliding door rollers, also applicable in other cases
ciprocating motion is employed."
of fitting the axis of a sliding door roller in a fixed bearing, I place it in a horizontal slot in which
order to diminish friction and prevent the door settling down by the wear of the parts.
ers when placed at the top of the door I mount in a bar or plate above the door frame carrying
rail.
r is suspended from the bar and adjusted in position by screws.
de of mounting the roller axes is also applicable to the bed of a printing press, and otherwise
rs are employed to facilitate reciprocating motion.
, 10*d.* Drawing.]

A.D. 1868, July 24.—N° 2325.

LL, Frederick Hahn.—" Certain improvements in the mode of utilizing fuel."
uce coal, coke, peat, wood, charcoal, or other combustible matter into furnaces in a state or
of powder or dust instead of solid lumps or blocks, as is generally the practice.
uce this said carbon dust or powder by means of a blast either of air or steam, or both combined,
ced by a fan, a bellows, or blowing engine, or by means of a steam jet direct from a steam boiler.
and steam employed in connection with this carbon dust or powder I heat or superheat by one of
generally employed and well understood.
, 10*d.* Drawing.]

A.D. 1868, July 24.—Nº 2326.

BARNABY, Nathaniel.—(*Provisional protection only.*)—" Improvements in sheathing iron or steel ships " or vessels with zinc or other metal or material not galvanically destructive to iron in sea water."

This Provisional Specification describes forming a cavity in the stem of the rivets which fasten on the bottom plates and filling the cavity with a softer metal not capable of injury by the galvanic action of the bottom plating, and the sheathing being laid on is fastened by driving through the sheets and into the stems of the rivets, nails, or pegs of lead, or alloys of lead, or other soft metal. Different modes are described of preparing the rivets both for hot and cold rivetting, also modes of putting on the sheathing and "hitting" the points where the ends of the rivets are.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 24.—Nº 2327.

LAKE, William Robert. — (*A communication from Robert Wilde and Charles Schofield.*) — " Improvements in teeth for machines for picking or separating cotton, wool, and other fibres."

The said invention consists chiefly in making the spike teeth of a picker machine so that the whole of that portion of each tooth which is to project radially from the carrying cylinder shall be thin or flat in its transverse section, and when the teeth are inserted in the lags of the cylinder with their said flattened portions projecting radially therefrom the flat surfaces shall be in vertical planes parallel with each other and with the planes of the ends of the cylinder. Thus the same thin form of the ends of the teeth will be presented to the rolls of the machine during the continued wearing away of the teeth, the said rolls or the cylinder being made adjustable in the bearings so as to be readily altered in position to compensate for the gradual shortening of the teeth. The said invention also consists in giving a flattened form to a portion of the opposite end of the picker tooth for the purpose of preventing the rotation of the said tooth in the lags during the working of the machine.

[Printed, 6*d.* Drawing.]

A.D. 1868, July 24.—Nº 2328.

SMITH, George.—" Improvements in machinery for obtaining rotary motion, and for raising, forcing, and " measuring fluids."

The said invention relates to that class of engines in which a number of blades or plates working within a cylinder are caused to rotate around an axis at the centre of the said cylinder, and whose effective piston surface is the area of these blades or plates between the interior periphery of the cylinder and a rotating drum arranged excentrically within the same.

The rotating blades are hinged together at the centre of the cylinder upon a pin or rod passing through jaws formed on each blade. The said blades are fitted to slide through packing pieces extending lengthwise across the drum. These packing pieces are fitted to turn in circular bearings near the periphery of the drum. The portion of the drum shaft within the cylinder is formed with a longitudinal aperture to receive the centre of the arms, and the portions of the shaft enclosing this aperture are fitted into grooves or keyways in the drum in such a manner that the latter is securely attached to the said shaft but is free to move endwise thereon and adjust itself accurately to the bearing surface at the ends of the cylinder. Loose discs are fitted upon circular parts formed on the drum and extending beyond each end of the cylinder, the cylinder covers being dished to receive the said loose pieces and leave a space for the steam between the same and the covers. The drum is so arranged as to run nearly in contact with the periphery of the cylinder at one point, and I form on one or both sides of this point a series of ports or apertures for the admission and exhaustion of the steam. These ports are preferably formed through the central portion of the periphery of the cylinder, and to prevent the unequal wearing and friction which would arise at this part of the cylinder by the existence of more bearing surface at the sides than in the centre I extend from each end of these ports to the ends of the cylinder grooves or channels of corresponding width. The steam may be entirely or partially cut off at these ports or apertures by valves fitted in suitable cases and so arranged that they can be adjusted to cover all or a portion of the ports.

[Printed, 2*s.* 10*d.* Drawings.]

A.D. 1868, July 24.—Nº 2329.

THIBIERGE, Germain Adolphe.—" Improvements in preserving animal or vegetable substances."

To 1,000 parts by weight of water is added 100 parts by weight of sulphuric acid or soluble caustic. The substance to be preserved is first immersed in the liquid for 5 minutes or more according to the temperature; it is then washed with filtered water and afterwards dried by a current of air or gas. Should the substances or cut their preservation may be still continued by submitting the cut part to the same

d. No Drawings.]

A.D. 1868, July 24.—N° 2330.

obert.—" Improvements in dressing millstones, and in apparatus therefor."
ntion relates to improvements in connection with N° 475, 1868. A simple rectilinear movement
nswer satisfactorily by applying a particular kind of diamond, namely, what is ordinarily called
amond or carbon, and is met with in Brazil, Siberia, and elsewhere in the form of small rough
-colored stones. The action of the tool is further improved by introducing a layer of rubber or
le elastic material between the actual diamond holder and the slide which carries and guides it
ent its being absolutely rigid. Another improvement consists in arranging the tool to cut in
ons. Steadyness is secured by applying at or near the end of the arm holder a loaded foot to
surface of the stone, and which is bolted to the arm holder with an interposed layer of rubber or
le elastic material. The present invention also comprises an improved mode of fixing the
ich consists in making the holder of three or more angular pieces of metal shaped to fit together
e angles which meet cut away or slightly hollowed to receive the diamond.

10d. Drawing.]

A.D. 1868, July 24.—N° 2331.

, Thomas, and YATES, Walter Edward.—(*Provisional protection only.*)—" Improvements
for weaving."
lty of the invention consists,—
constructing the " healds " or " heddles " employed in looms for weaving of fine wire or fine
er material combined, which are knit in the ordinary manner, so as to form a heald for any
ends " required.
In regulating the tension of the yarn when shedding by means of a vibrating bar actuated by
he said bar, in its movement between two guide bars over which the yarn passes, regulating the
e warps as desired when " shedding."
In passing the cloth between temple rollers supported on centres in the temple box, such box
cted to the " temple bar " by means of a swivel or hinged bracket; and,
he novelty consists in placing an adjustable guard on the " reed " that will prevent it being
n its course by " floats " or other extraneous matter when picking.

d. No Drawings.]

A.D. 1868, July 24.—N° 2332.

illiam Edward.—(*A communication from Emile Adolphe Tyrode and Pierre Théophile Cousty.*)
ements in the method of and apparatus for feeding steam boilers."
ntion consists in placing a reservoir above the boiler and in connection therewith by two tubes,
ing from the bottom of the reservoir to the middle of the boiler, of which it is the feed pipe,
om the steam chamber of the boiler to near the top of the reservoir, and forming a steam egress

boiler requires feeding taps on the feed and steam egress pipes are both opened, the steam rises
of the reservoir, and when the pressure on the liquid therein contained is equal to the pressure
the weight of the water opens a valve in the feed pipe and the water enters the boiler until the
is obtained, when the tap on the steam pipe is closed and the pressure of the steam in the boiler
lve of the feed pipe.

d. Drawings.]

A.D. 1868, July 24.—N° 2333.

Benjamin George.—" Improved machinery for bronzing printed work."
ing hopper for feeding a bronze distributing roller is put into and thrown out of action by a
, so that no bronze is delivered except when the work is presented to the distributing roller.

10d. Drawing.]

A.D. 1868, July 24.—N° 2334.

, John Henry.—(*A communication from Auguste Ponsard and François Eugène Boyenval.*)—
ements in the manufacture of cast and wrought iron and steel, and in the furnaces employed

This invention relates to a peculiar process and furnace for manufacturing cast and wrought iron and steel, whereby the costly blast furnaces hitherto employed are entirely dispensed with. The peculiar furnace employed in carrying out this invention is constructed somewhat similar to a reverberatory furnace, with a double sloping hearth for the collection of the molten metal. The hearth is heated either by an ordinary fireplace or furnace, or by gas, in which latter case a Siemens' or other like apparatus well known to metallurgists would be employed, the flame and products of combustion entering by suitable conduits at one end of the furnace and passing off by other like conduits situate at the opposite end. Upon each of the sloping sides of the hearth rest the lower ends of a number of vertical fire clay tubes or crucibles without bottoms, such tubes entering at their upper ends into holes in the roof of the furnace, which roof is covered by a cast iron plate forming a platform and being provided with moveable lids which fit over the mouths of the different openings leading down into the tubes.

The ore fluxes and fuel are suitably fed into the several tubes from the platform or plate above referred to, and heat is then applied to the furnace, the flames circulating or playing round the exteriors of the several charged tubes and effecting the fusion of the ore without coming into actual contact therewith.

[Printed, *6d.* Drawing.]

A.D. 1868, July 25.—Nº 2335.

RITCHIE, Charles.—(*Provisional protection only.*)—"Improvements in portable head dress and other "coverings for protecting the head or body against sun, rain, or weather."

Consisting of an umbrella or other shade or covering supported not on the head or by the hand, but attached to the body by means of suitable straps and framework, or annexed to the body by the intervention of any convenient arrangement, thus leaving the hands free.

[Printed, *4d.* No Drawings.]

A.D. 1868, July 25.—Nº 2336.

YOUNG, John, POLLOCK, Robert, and MORRISON, John.—(*Provisional protection only.*)—"Improvements in arrangements or apparatus for preventing smoke in connection with boiler furnaces."

This invention has for its object the preventing of smoke in connection with boiler furnaces in such a way as to economise fuel, and it consists in causing a large portion of the fire gases which proceed from a furnace to pass again through the fuel along with the air necessary for combustion.

[Printed, *4d.* No Drawings.]

A.D. 1868, July 25.—Nº 2337.

STEEL, James.—(*Provisional protection only.*)—" Improvements in cask washing apparatus."

This invention has for its object the constructing of cask washing apparatus in an improved manner, and so as to act more efficiently and conveniently than such apparatus as hitherto made. The invention comprises various modifications differing in details, but all possessing the main feature of combining an axial or equivalent motion of each cask with a separate motion of the main frame.

[Printed, *4d.* No Drawings.]

A.D. 1868, July 25.—Nº 2338.

GREENHALGH, John.—" Improvements in machinery or apparatus for opening and cleaning cotton and "other fibrous materials."

The novelty of this invention consists, first, in the application and adaptation of the creeper and feed rollers, which move with an intermittent motion for supplying the material to be cleaned to the machine.

Second, in the application and adaptation of the door or slide at the top of the machine, acting with an intermittent motion, with or without the dust fan, revolving cage, and creeper, for discharging the cleaned material from the machine.

Third, in the application and adaptation of the flake which is opened and closed at intervals by an intermittent motion, to be used in supplying the material to the machine.

[Printed, *10d.* Drawing.]

A.D. 1868, July 25.—Nº 2339.

BROOMAN, Clinton Edgcumbe.—(*A communication from Louis Beck.*)—(*Provisional protection only.*)—"Improvements in apparatus for drying filamentous matters, tissues, and other substances."

Within a chamber an apron or diaphragm of metallic cloth is fitted, on which the material to be dried is laid. This apron is supported by walls which prevent the air entering except through meshes or openings in the apron. Under the apron is a compartment, at one end of which is a pipe to act as an escape, into air drawn through the apron is made to pass. A double action air force pump is placed in another which also contains a reservoir for the compressed air. From this reservoir the compressed air ough a pipe into the interior of the escape pipe at its bend, and issuing up it draws or sucks the he compartment under the apron away to the outer atmosphere.

d, 4*d*. No Drawings.]

A.D. 1868, July 25.—Nº 2340.

HARLES DENTON.—(*A communication from Hilarion Roux.*)—" A new or improved process for ng the zinc from the argentiferous alloys obtained in the separation of silver from argentiferous means of zinc, and improvements in the furnaces employed for that purpose."

vention consists in separating the zinc from the argentiferous alloys of lead by first submitting the e liquation process for removing the greater part of the lead and then introducing it, broken up fragments into a reverberatory furnace, the bed of which is formed of two inclined plates covered rick. In this furnace the alloy is covered with litharge and heated so as to produce a reaction, he litharge is reduced by the zinc, while the lead combines with the silver, and is caused to run off n aperture. The litharge and oxide of zinc are then heated still further, and the remaining ous lead having been run off therefrom, the litharge is run off separately. The rich lead is then to the cupellation process, and the litharge is heated in a cupola furnace.

l, 6*d*. Drawing.]

A.D. 1868, July 25.—Nº 2341.

M, JOHN, and BICKERTON, RICHARD.—" Improvements in drill rollers and seed sowers com- r as separate machines."

vention essentially consists, first, in the construction and use of drill rollers of any desired length form or contour as heretofore, but constructed of a series or set of narrow disc or ring wheels ed heretofore for clod crushers and land pressing and cutting rollers, mounted on a hollow spindle dividually revolve on it and be capable of shifting and adjusting itself as a whole to suit the width the hollow shaft on a solid fixed axle, and carried on and by the ordinary constructions of frame e, and attached in the manner heretofore practised. And the second part of this invention consists struction and use of a new or improved mechanism for depositing beans, peas, or other seeds at tervals in the earth, formed of a short hollow cylinder open at one end and close at the other, by l it is keyed to the horizontal spindle (arranged and actuated as usual in such seed sowing n and machines) so as to revolve with its open end some little distance into the seed box, having her number of short segmental wedge or scroll recessed parts formed on the annular end leading l grooves along the inner circumference into round holes at their end through the body of the t corresponding regular distances round it outside the seed box to the scroll and spiral grooves, e up the seeds and deliver them through the said holes into the usual conducting spout for the egularly on the ground as the shaft and cylinder is turned. A stationary conical ring being to shift laterally into or out of the open end of the cylinder by short rods, and a screw or lever gh the opposite side of the seed box, so as to regulate the opening at the entrance of the spiral suit the size or number of seeds which can pass into them at one turn of each groove, as one, two, umber.

provements under the first or second part of this invention may be worked together as a combined and seed sower, or they may be each worked separately as a drill roller or a seed sower, or the may be worked with seed sowers all otherwise as heretofore constructed and used, and the new g mechanism may be worked and applied to most constructions of drills and seed sowers or seed sowers and rollers as heretofore constructed and used.

d, 1*s*. Drawing.]

A.D. 1868, July 25.—Nº 2342.

N, ALFRED VINCENT.—(*A communication from James Knox Glenn.*)—" An improved construction ble railway."

vention is based upon the self rail laying principle, and consists chiefly in arranging on either side waggon, or other vehicle or craft, a continuous or endless rail or set of rails, with a corresponding ent of trucks adapted thereto, the trucks being connected into endless chains fitting around the

d, 8*d*. Drawing.]

A.D. 1868, July 25.—N° 2343.

WRAY, Leonard.—" Improved methods of and apparatus for obtaining or separating metals from their " ores, matrices, slimes, and tailings."

The ore is triturated in metal or wooden cylinders which are made to roll along a railway, so that rollers placed inside the cylinder will grind up or triturate the substance. The amalgamating machine consists of a series of plain or corrugated amalgamated discs, mounted on a shaft, and placed in a trough, and the shaft is rotated so as to stir up and agitate the liquid mass and catch the metallic particles which will adhere to the amalgamated plates or be taken up by the mercury at the bottom.

[Printed, 1*s*. Drawing.]

A.D. 1868, July 25.—N° 2344.

NEWTON, Robert.—" Improved machinery for opening and straightening fibres."

This invention relates to the opening and straightening of fibres by the use of endless sheets furnished with steel pins or combs, and so arranged as to clear each other at the same time that they straighten the fibres passed through the machine.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, July 25.—N° 2345.

PRINCE, Alexander Charles Montague. — (*A communication from Sterling Bonsall and Louis Hillebrand.—(Provisional protection only.)*—" A new or improved bell-pull for door bells."

The novelty of this invention consists in actuating the bell pull by a downward oblique or curved downward motion in the construction of a hinge by the forked end of the handle resting over a pintle placed across a slot or over the edge of the same : in the tongue formed in two parts so hinged as to allow the handle to move downwards while the link moves horizontally and connects the bell wire with the handle: in the tongue in one piece attached to the handle for the same purpose, and in the plate, the handle, the hinge and tongue combined to form a bell pull. A spring may be applied to the back of the hinged plate to cause the return of the pull.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 25.—N° 2346.

LAKE, William Robert.—(*A communication from Robert Wilde.*)—(*Provisional protection only.*)—" Im-" provements in steam boilers and in the means for maintaining the proper water level in the same."

My improvements relate to flattened steam boilers or generators which have the upper and lower sides of their shells stayed to each other by close vertical, longitudinal partition plates which divide their interiors into several distinct steam generating chambers.

The said improvements consist partly in perforating the said partition plates with numerous holes for the purpose of allowing the contained water and steam free communication with all the different divisions. My invention also consists in the application to steam boilers or generators having such perforated partition plates of vertical transverse partition plates across the divisions for the purpose of preventing any injurious surging of the contained water of the boiler or generator when the same is subjected to a longitudinal or pitching motion as on a steam vessel or other carrier. My invention also consists in the application to such boilers when the same are arranged with one directly above another of vertical overflow pipes for the purpose of affording an open communication and equality of pressure in the said different boilers, and also for the purpose of allowing the water to be fed to the lower boiler by overflows from the upper one substantially in the manner herein-after described. And finally my invention consists in combination with the said boilers arranged with one directly above another, and connected together by means of the said vertical overflow pipes in the employment of a float in the lower boiler in connection with a feeding cylinder on the upper boiler arranged to operate together for the purpose of feeding the said boilers automatically.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 25.—N° 2347.

CLARK, Alexander Melville.—(*A communication from Corrado Trinchieri.*)—" Improvements in the " means of steering vessels and in apparatus for the same."

In order to steer vessels provided with steam power I dispose a pipe along the longitudinal axis of the ship or at one side below the water line, provided with cross channels at one or both ends for the admission and discharge of the water which is regulated by means of cocks.

The pump for supplying the water to the longitudinal pipe is connected to the screw engine shaft so as to be detached when desired.

eral motion is not required one half of the longitudinal pipe may be dispensed with, as also one of ks retaining only the stern portion.

ted, 1*s.* 6*d.* Drawings.]

A.D. 1868, July 27.—N° 2348.

MAN, Arthur James.—(*A communication from Johann Ernst Friedrich Lüdeke.*) — (*Provisional on only.*) — " Improvements in the means of and apparatus for obtaining and applying motive r."

object of this invention is to obtain a motive power. I use a tank or box, having two upright pieces an angle from the sides, two wedge or trapezium shaped pieces are placed against these upright and between these wedges is placed a third wedge or isosceles triangle shaped piece, which fits all three are made to move to and fro, and are airtight at the sides and between the upright pieces oved forward or in one direction, but as soon as they have moved as far as they have to go two r valves which are placed between the three wedges shift or open, thereby causing the contact to be and they can then freely return. Adjoining the middle wedge is another wedge shaped or right triangular piece which moves with the centre wedge and at the same time moves from side to side by a slanting slide in which a pin or stud works in a groove.

box or tank is then closed and filled with compressed air or fluid, when by reason of the wedges ing altogether a wedge like form, a greater pressure will take place at one side and less at the opposite the wedges can freely return a movement takes place. Rods connect the wedges with the machinery riven. The wedges can be made hollow, and of various dimensions, and can be assisted in their ents by any mechanical arrangement.

ted, 6*d.* Drawing.]

A.D. 1868, July 27.—N° 2349.

, James Allison, the younger.—" An improved lamp."

his lamp is a blow pipe consisting of two concentric tubes, one of which communicates with a sing pump and the other with a supply of gas; the mixture of gas and air thus obtained is passed a metallic perforated plate which divides it into numerous small jets which are lighted after passing fine platina gauze (or other suitable metallic gauze), which soon becomes incandescent. The supply of l of air is regulated so that combustion is made perfect, flame disappears, and the platina becomes a surface of intense light.

nted, 6*d.* Drawing.]

A.D. 1868, July 27.—N° 2350.

HTON, George Richard Vevers, and JACKSON, Edward Blasini.—" A new or improved rial for the manufacture of bosses for flax spinning machinery."

novelty consists in,—

ufacturing the said bosses of a composition of india rubber and pure golden sulphuret of antimony.

nted, 4*d.* No Drawings.]

A.D. 1868, July 27.—N° 2351.

IN, James.—" Improvements in making aniline black, and in applying it to textile fabrics and s."

invention consists in certain new methods of producing aniline salts in solution for the purpose of aniline black upon textile fabrics and yarns, and in the use of a certain salt of copper not hitherto ed for producing aniline black.

nted, 4*d.* No Drawings.]

A.D. 1868, July 27.—N° 2352.

S, John.—(*Provisional protection only.*)—" Improvements in the means and apparatus for increasing by combustion of fuels and consuming smoke."

novelty of this invention is, *first*, for steam boilers the agent required (N.B. steam) is obtained from ler direct; the retort may be fixed in the front of the furnace and acted upon by the fire, thus assisting eration of the oxygen gas. *Second*, the apparatus is self-contained. *Third*, if properly constructed it perfect smoke consumer by simple and inexpensive means.

nted, 4*d.* No Drawings.]

A.D. 1868, July 27.—N° 2353.

LAURENDEAU, Charles Joseph.—"Improvements in life-preserving apparatus for floating and "sustaining persons in the water."

The form of this apparatus may vary, but the simplest kind is that of the chasuble, in cloth or woollen stuff, furnished at the abdomen and chest with thick pieces of cork, and between the shoulders and reaching to the nape of the neck a thinner supply of cork; the two parts of the chasuble are united under the arm pits by means of laces, buttons, or clasps.

Another form is a sash and pelerino, united as before and supplied with cork at the parts mentioned; the cork can be applied in bands or rolls, covered and connected to an ordinary bathing dress; or in place of the cork inflated india rubber or any other hollow and light body may be used.

For divers the collar is removed, and a pipe or tube for breathing through, terminating in a cork funnel for floating on the surface is employed, the principal piece of the apparatus being made an air reservoir, from which the swimmer draws in and expells air by means of a double tube, the reservoir being divided into two compartments by an elastic partition or kind of diaphragm.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 27.—N° 2354.

DUFRENÉ, Hector Auguste.—(*A communication from Louis Edouard Hannecart.*)—(*Provisional protection only.*)—"An improved indicator of time and distance for vehicles, applicable also for registering "the speed of the said vehicles and the number of passengers carried by the same."

This invention consists in an indicator for time and distance for vehicles, shewing the speed of the said vehicles, the distance travelled over, the number of passengers, time of stoppages, and the distance run when empty.

On sitting down on a seat the passenger causes a pencil to move, which traces a line on a sheet of paper moved by the wheels. The mechanism is provided with a dial moved by the two combined movements (videlicet, the hour movement given by a clock, and the distance movement given by the wheel) registering the distance of each journey and consequently the fare to be paid by the passengers. The hand is brought back to 0 when the fare is paid. The hand always marks a certain given speed per hour, and when the actual speed exceeds or is less than the given speed, a rod placed behind the hand which carries a small flag inclines to the right or left. On the side of the body of the carriage is an opening on which appears the word 'disengaged,' or 'hired,' according as the vehicle is hired or not.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 27.—N° 2355.

NEWTON, Alfred Vincent.—(*A communication from Robert Hunter.*)—"An improved propeller for "steam vessels, canal boats, and other vessels."

The propeller is composed of floats pivotted so as to open and close by the action of the water upon them, and mounted on a vertical oscillating lever.

[Printed, 1*s.* Drawings.]

A.D. 1868, July 27.—N° 2356.

LAMBE, Frederick, STERRY, Arthur Charles, and FORDRED, John.—"Improvements in "treating animal and vegetable oils, fats, fatty acids, wax, resins, essential oils, balsams, and the solid "and liquid hydrocarbons."

The solid and non-volatile oils, waxes, fats, fatty acids, resins, and hydro-carbons are melted and treated with fuller's earth in a finely divided state, while those capable of being distilled are distilled in contact with fuller's earth placed in the still or other vessel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 27.—N° 2357.

CLARK, Alexander Melville.—(*A communication from Jean Baptiste Toselli.*)—"Improvements in the "manufacture of artificial ice, and in apparatus for the same."

I employ a series of conical or other shaped receptacles disposed concentrically in any suitable number, in which is placed the liquid to be congealed.

These receptacles are provided with india rubber discs to keep them tight and placed in the machine containing the freezing mixture, to which motion is applied, either rotary or oscillating. This operation only takes from ten to fifteen minutes, after which the thin cones or films of ice are taken out of the recep-

and placed one in the other, they being sufficiently cold to adhere and form a solid block, which will for days.

Printed, 1s. Drawings.]

A.D. 1868, July 28.—N° 2358.

URD, Claverhouse Alfred.—(*Provisional protection only.*)—" Improvements in sewing machines."

he combination and general arrangement of the parts, and an improved hook or looper.

Printed, 4d. No Drawings.]

A.D. 1868, July 28.—N° 2359.

EN, William Frederick Monday.—(*Provisional protection only.*)—" Improvements in the loading f muzzle-loading big guns and the apparatus connected therewith."

he substitution, instead of a ramrod for ramming home the charges of muzzle loading big guns, cannon, ther ordnance, of a spiral spring or other arrangement having an equivalent property of expansion and traction fitted at the end as would be a ramrod or rammer, to take position opposite the cannon's mouth be altogether within the tower, turret, or other position the gun may occupy, and to be mechanically erned.

[Printed, 4d. No Drawings.]

A.D. 1868, July 28.—N° 2360.

WIS, Walter.—" Improvements in needle wrappers."

ne part of this invention consists in making a pocket or folded part at the bottom of the wrapper ough a cross slit in which the loose needles are passed, the needles being supported by their points resting the folded edge of the pocket or folded part.

nother part consists in making a pocket or folded part in the wrapper of sufficient length to hold two more series of needles, slits being made in the longitudinal pocket, through which the needles are passed. e paper of the wrapper is in this case folded in a longitudinal direction to form the pocket, instead of swise, as in the first described wrapper.

[Printed, 1s. Drawings.]

A.D. 1868, July 28.—N° 2361.

TTS, Henry.—(*Provisional protection only.*)—" Improvements in the construction of rails for ailways."

groove is formed in the upper side of the rail, into which is fitted a strip of elastic material for the eels of passing trains to bear on to deaden the noise.

[Printed, 4d. No Drawings.]

A.D. 1868, July 28.—N° 2362.

EANE, Edward Samuel Tyrrell.—(*Provisional protection only.*)—" Improvements in the manufacture of soap."

In order to make one ton of soap I boil from one to two hundred-weight of oil, grease, or fatty substance th two, three, or four hundred-weight of caustic soda lees, for one, two, or three hours, to which I then d separately eight, ten, or twelve hundred-weight of lime water, from two to three hundred-weight of soda ystals, two to three hundred-weight of silicate of soda, one to two hundred-weight of common salt or salt ke, and one quarter of a hundred-weight of nitre cake. The matters are boiled together from one quarter half an hour, lime water being added to compensate for evaporation, and then framed and crutched l set.

To give wear to the soap I add thereto a proportion of animal substance, such as horn or bone dust, teguments of animals, ground cereals, or pulped vegetables.

[Printed, 4d. No Drawings.]

A.D. 1868, July 28.—N° 2363.

YDES, Thomas, and BENNETT, Joseph.—" Improved means or appliances for facilitating the transit and application of caloric; also for mixing caloric with air, water, and other fluids and gases; also for economizing the consumption of fuel, consuming smoke, generating steam, and increasing and distributing heat; and for refrigerating purposes."

This invention consists, first, in the application of guides or channels to direct hot gases or fluids to the rface of their containers, such as flues, tubes, or other channels, for the purpose of more fully developing d absorbing the caloric from the gases or fluids and using the same for any specified purpose, which caloric would otherwise be lost by passing away through the body or central part of the flues or tubes. Secondly, in applying on each or only on one side of a partition situated between the hot and cold guides or channels through which air, fluids, or gases are guided in parallel lines or nearly so, or in cross lines and in constantly circulating streams, which pass instantaneously within the most effective distance over and entirely cover the whole surface of the said partition intended to be acted upon for the purpose of transferring their heat or caloric from one fluid to any other fluid.

Thirdly, in passing hot liquids through flues or tubes by directing cold air or water against the outer or cold side of the aforesaid partition to cool the said liquids and thereby operate as a refrigerator.

[Printed, 10*d.* Drawing.]

A.D. 1868, July 28.—N° 2364.

WEBSTER, JAMES.—" Improvements in the manufacture of gas and vapour, and in applying such gas " and vapour in manufacturing and refining iron and other metals, and in recovering certain products " therefrom."

The novelty in this case consists, first, in causing atmospheric air to take up hydro-chloric acid gas or vapour, and then forcing the same through the metals while the latter are in a molten condition; secondly, in causing air and steam mixed to be forced through hydro-chloric acid, then through or over wood, naptha, or volatile spirit, then through or over water, and then through the metals while in a molten state, to take up the impurities therein; thirdly, in forcing such gases or vapours through a close receptacle containing wrought iron articles (both being heated to a red heat) for case hardening or steeling the said articles; and, lastly, in recovering the precipitated carbon and ammonia.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 28.—N° 2365.

HODGSON, GEORGE, BOTTOMLEY, HENRY, and COCKROFT, EZRA.—(*Letters Patent void for want of Final Specification.*)—" Improvements in looms for weaving."

The object of one part of the invention is to obtain friction to the taking up rollers or beams of looms by the application thereto of india rubber, by preference vulcanized or prepared. The object of another part of the invention is to allow of the wefts being acted upon separately by the weft forks when using oscillating shuttle boxes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 28.—N° 2366.

BULLOUGH, JOHN.—" Improvements in looms for weaving."

The invention consists,—

Firstly, in improved means for working the shuttle holders of looms.

Secondly, in improved means for holding the picker back at the supply side of the loom so that it cannot interfere with the dropping of the shuttles into the box; and,

Thirdly, in improved means for enabling warp threads to be taken up or pieced without stopping the loom.

[Printed, 2*s.* 6*d.* Drawings.]

A.D. 1868, July 28.—N° 2367.

LA MONT, CHARLES AUGUSTUS.—" An improved preparation of eggs."

The novelty of this invention consists in the production of an article of dried and hardened eggs in the form of thin scales, flakes, or particles of a bright clear color, and fresh pure flavor and quality which will readily dissolve in cold water and will when thus properly dissolved after any length of time possess the useful qualities and characteristics of freshly beaten eggs.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 28.—N° 2368.

LAKE, WILLIAM ROBERT.—(*A communication from Christian Wahl.*)—" Improvements in glue and in " the mode of and apparatus for manufacturing the same, the said improvements being also applicable to " the manufacture of gelatine and other material."

The first part of the invention consists in the manufacture of the glue in the form of thin flakes or scales. The second part of the said invention consists in the employment of plates of porcelain, glass, enamelled iron, india rubber, or metal coated with rubber or the like which present surfaces not affected by acids in the glue for the purpose of drying the glue in a thin film thereon, also in turning the plates, which are preferably discs, two or more times in the liquid material, chilling it between each immersion, and thereby

n a thicker and more uniform coat; also in pouring or throwing the glue upon the plates or discs
is not convenient to immerse them. The third part of the said invention consists in transporting a series
s or discs on a suitable carrier as a wheel, or chain, or belt, to be exposed to drying influences; also
s for adjusting the position of a pulley to compensate for wear or slackening of such belt or chain;
he employment of deflectors, which disturb and deflect the air on the outside of the channel in which
es are carried; also in the employment of inside deflectors which disturb and deflect the air on the
f the channel, these latter deflectors being ordinarily carried on the belt or wheel and moved with the
also in the combination of both outside and inside deflectors arranged to mutually act on the currents
d to agitate and disturb them, and compel them to better circulate over the surfaces where the glue
ed; also in a peculiar construction of the apparatus by making the flexible part in the form of a chain
igid links, and by making the pulleys in the form of prisms corresponding thereto; also in the
nent of chemicals for drying the whole or a portion of the air thus circulated with or without the
nent of heat; also in the manner of employing two currents of air, the one cold for chilling the glue
rried only a little way, and the other either warm or chemically dried, or both, being carried a
ortion of the way through the channel or extended chamber, through which the glue is thus carried;
he general combination of a carrier with glue-presenting surfaces rotating on axes carried thereon,
h drying currents as hereinafter specified; also in presenting the glue on horizontal plates or very
dishes in a vacuum or in drying currents of air or analogous drying influence. The fourth part of
invention consists in rubbing the surfaces with a brush, also in rubbing them with a brush or clearer
as an active motion additional to the motion of the surfaces on which the glue is carried; also in
or rapidly turning the discs on which the glue is dried during the period while they are being brushed
d of the glue. The fifth part of the said invention consists in the employment of a pulley arranged
t the descending part of the belt so that the glue falling by gravity from the plates in their descent
fall into the melted glue in the tank below, and also consists in the employment of a chamber having
r analogous material with fine openings in the upper part into which the air is received after it has
d over and among the glue presenting surfaces in order to arrest and cause the descent of the glue
as been transported away by the motion of the air.
ted, 1*s*. Drawings.]

A.D. 1868, July 28.—N° 2369.

N, Samuel Manley, and VARLEY, Samuel Alfred.—"Improvements in train inter-
unication, parts of which invention are applicable to electro-magnetic and electric telegraph
atus."
vention consists, firstly, in the construction of flexible conductors for the electrical connections
vehicle to vehicle.
dly, in making the act of coupling the carriages together when marshalling a train; also to join up
rical connections.
ly, in the construction of electric bells.
hly, in the construction of galvanic batteries.
ted, 10*d*. Drawing.]

A.D. 1868, July 28.—N° 2370.

ALL, Abel.—"Improvements in the manufacture of needles."
nvention consists in forming needles with a kind of double eye, so that a needle having been
l the thread or sewing material may be securely retained in the eye during work.
ted, 6*d*. Drawing.]

A.D. 1868, July 29.—N° 2371.

S, John.—(*Provisional protection only.*)—"Improvements in means employed to ascertain the
er of passengers or visitors and the amount of money received by omnibus conductors and other
ns."
nvention consists in the employment of tickets upon which are indicated the various fares or prices
, and a box or receptacle is fixed in any suitable position, such box being provided with suitable
r deflectors to facilitate the entrance of the tickets therein, whilst they act to prevent the surreptitious
on of such tickets therefrom.
an omnibus conductor or other person is paid a fare or receives payment for a purchase or entrance
in exchange for such payment a ticket which may have the amount paid previously marked thereon,
amount may be marked thereon at the time of payment. The person receiving such ticket is

required to place it in the box or receptacle before mentioned, or to see that it is so placed by the person in charge.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 29.—N° 2372.

SIMPSON, JOSEPH.—"Improvements in machinery for moulding toothed wheels."

The machinery consists of a stand with a circular slide and of two ring turntables, which are divided, one acting as a differential divisor to the other. To one of the ring turntables is fitted a horizontal slide, and a vertical slide for the segment pattern [*is applied to the end of the horizontal slide. The segment pattern**] is moved after each portion of the wheel has been moulded by a worm and wheel or otherwise until the whole circumference is completed.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 29.—N° 2373.

WINSER, FRANKLIN.—"Improvements in the manufacture of sulphate of magnesia or Epsom salts from "dolomite or magnesium limestone."

The patentee obtains sulphate of magnesia or Epsom salts from dolomite or magnesium limestone by means of sulphides from gas purifying, and also by using sulphides from the manufacture of carbonate of soda.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 29.—N° 2374.

MABSON, JOHN.—"An improved cinder sifter and shovel combined."

A shovel is constructed in two parts, one forming the scoop, the other a box, into which the ashes are free to enter when the front of the shovel is raised and shaken, a grating being fixed across the shovel, through which the ashes pass. To the shovel back a bar is hinged, one end of which forms a handle while the other has a plate on it forced into the back compartment against the grating rails, and retains the ashes there. When the plate is down the cinders may be thrown from the shovel. The shovel is fitted with a fixed handle.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 29.—N° 2375.

HERRING, EDWARD.—"Improvements in the treatment of saccharine solutions of malt or sugar."

Saccharine solutions are reduced to 54° or more Fahrenheit, and during, before, or after attenuation are treated with sulphuric or other acid, converting the whole into grape sugar. A portion of the acid is neutralized by lime or carbonate of lime to form a sulphate of lime in the exact quantity existing in Burton waters, the remainder by barytes or lime or other carbonate or caustic alkali. When the gyle is run into a settling back a gelatinous matter is added which precipitates all barm and albuminous and nitrogenous matters. After 12 hours it is racked off "brilliant."

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 29.—N° 2376.

LAKE, WILLIAM ROBERT.—(*A communication from Robert Edmund Ferguson and Benbow [illegible] Ferguson.*)—"An improved compound to be used as a substitute for linseed oil in the preparation of paint "and varnish."

The said invention relates to a compound which can be used instead of linseed oil in the preparation of paints and varnishes. To form this compound I use ten gallons of carbon oil, fifteen pounds of resin, four ounces of beeswax, four ounces of litharge, one ounce of the gum-caoutchouc, and one gallon of the spirits of turpentine, or gum-shellac and linseed oil may be substituted for the spirits of turpentine, beeswax, and litharge. The carbon oil and resin are mixed together by subjecting the same to heat, the beeswax and litharge having first been boiled together are then added. The gum-caoutchouc is then dissolved in the turpentine, which is then mixed with the compound, and the same is ready for use.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 29.—N° 2377.

LAKE, WILLIAM ROBERT.—(*A communication from Samuel Remington.*)—"Improvements in breech-"loading fire-arms, parts of which improvements are applicable to other fire-arms."

The breech-loading fire-arms to which these improvements relate are of the class wherein the breech aperture is closed by a cylindrical bolt fitted to turn and slide in a chamber in line with the barrel, and in which the cartridges are exploded by means of a pin carried by the said bolt and actuated by a hammer or f the breech shoe, the pin being turned away from the hammer to allow the bolt to be drawn back. is provided with a loose piece or head, which is kept from rotating with the bolt by means of an which is attached to the loose piece or head and slides in a longitudinal groove or channel in the ıber. The striking or firing pin extends through the centre of the bolt and loose piece. The rear e firing pin is provided with a lateral fin or extension fitted to slide through a projecting piece at f the rear end of the bolt. This fin or extension is so formed and arranged in relation to a recess r surface of the shoe as to allow the firing pin to act upon the cartridge if the hammer falls when ı is properly closed, but if the trigger should be pulled before the bolt is properly adjusted, the will be stopped by the solid part of the shoe. A shoulder on the firing pin is fitted between two ıe loose piece or head. When the said bolt is adjusted into the position for securing the breech between the jaws lies parallel with the shoulder and allows the said pin to move forward; but bolt is turned so far to the left that the pin is clear of the hammer, the said recess and shoulder ı other, the shoulder resting against the top of the jaws, the pin being thereby stopped. I form a the rear end of the bolt to receive the nose of the hammer. The bolt is by this means securely een the hammer and the side of the shoe, and cannot be moved till the hammer has been set to lf cock. I thus prevent the displacement of the bolt or cartridge when the arm is carried. The is a steel spring provided with a hook or claw, which is formed in such a manner as to slip easily lange or rim of the cartridge shells. The spring or bar of the extractor is lengthened and turned ts rear end to form another spring, which causes just sufficient friction to keep the bolt in any n which it may be adjusted. To prevent the sticking or binding of the bolt in its chamber, I fit o bear upon the projecting ends of studs or pins. The accidental slipping of the bolt from its s prevented by a spring stop at the rear of the bolt. When it is desired to remove the bolt from er this stop may easily be depressed. I employ by preference a lock provided with a notched nd sear, which operate in combination with a mainspring, as in ordinary gun locks, but whose enclosed in a narrow box, one of whose sides is made removable. The axles or fulcrum pins of the nd sear are supported in bearings in both sides of the said box. I secure the lock to the under ıe shoe in the centre of the stock. The mainspring is a flat piece of steel nearly straight, and is the under side of the shoe. I construct swivels for the gun straps with links formed of a piece wire. A space is left between the two ends of the link, and a pin or stud placed between them to ıe removal or displacement of the same.

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* The words "is applied to the end of the horizontal slide. The segment pattern" are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

d, 1*s*. 2*d*. Drawings.]

A.D. 1868, July 29.—N° 2378.

VILLIAM ROBERT.—(*A communication from Daniel Mills.*)—"Improvements in sewing machines, the means for heating the thread used in the same."

provements relate to sewing machines of that class which are intended particularly for the manu- boots and shoes, and are adapted not only to the manufacture of turned work but to the sewing- ts and soles, the operation of sewing being effected by the combined action of a barb or crochet d awl, both working concentrically within the radius of a circle. The said improvements consist the arrangement of a continuous shaft in combination with adjustable discs, whereby an inde- motion can be given both to the needle and to the awl; also in the arrangement of independent needle and awl stocks in combination with lever segments and toothed quadrants or other ıechanism in such a manner that the motion of the needle is rendered independent of the awl, and these instruments can be made to "dwell" or remain stationary at certain stages of its motion; the arrangement of an oscillating lever forming the bearing of the pivot of the needlestock in on with a lever segment and toothed quadrant on said needlestock in such a manner that by the the oscillating lever a motion away from the stationary axis of the awl stock is imparted to the k and needle without throwing the toothed quadrant out of gear with the lever segment; also in ement of a locking lever in combination with the oscillating lever which carries the needle-stock, in nner that the said oscillating lever is firmly retained in position while the needle passes through further in the arrangement of a thread carrier which receives a vibrating and sliding motion in nner that by said thread carrier the thread is looped round the hook of the needle with perfect ; also in the arrangement of a barb-coverer in combination with the needle and awl-stock, whereby f the needle is covered at the proper intervals to prevent its catching in the loops on its return also in the arrangement of a loop guide in combination with the feeder and oscillating needle in nner that each loop is acted upon at the proper moment and held in position to allow the needle rough it; further in the arrangement of a spiral spring and stop working in such a manner that the said awl shield is held close up to the material to be pierced, and is only withdrawn for a short time against the action of the spring to make room for the thread carrier; also in arranging the needle and the needle shield in such relation to each other that when the needle draws the loop tight its hook or barb is entirely inside the shield, thereby keeping the loop from getting out of the barb; further in the arrangement of a rising and falling lever and a transversely oscillating lever in combination with the feeder in such a manner that a sure and reliable feed is obtained; also in the arrangement of an adjustable gauge in combination with the sewing mechanism in such a manner that the position of the work in relation to the awl and needle can be regulated; further in the arrangement of a stop motion in combination with the driving shaft, and with the sewing mechanism, in such a manner that the machine will always be stopped when the needle and awl are out of the work; also in the arrangement of a self adjusting table, moving up or down in a vertical direction, and supported by a spring which presses it up towards the sewing mechanism in such a manner that the work is kept up against the guage, while the table adjusts itself; further in the arrangement of a treadle and spring catch in combination with the self adjusting table, and with the sewing mechanism, in such a manner that the operator is enabled to depress the table by the action of the foot; also in a tube situated in the lower part of the frame and exposed to the action of a flame for the purpose of heating the wax thread.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, July 29.—N° 2379.

NEWTON, Alfred Vincent.—(*A communication from Adrien Tardieu.*)—"An improved cutting and "polishing powder applicable in the manufacture of cutting, grinding, and sharpening tools and in the "production of refractory substances."

This invention relates to the use of "bauxite" as a cutting and polishing powder applicable in the manufacture of cutting, grinding, and sharpening tools and in the production of refractory substances.

[Printed, 6*d.* No Drawings.]

A.D. 1868, July 29.—N° 2380.

HARPER, John Robert.—(*Provisional protection only.*)—"Improvements in the production or manufacture of strips or ribbons of zinc or alloys of zinc suitable for being employed in the manufacture of "telegraphic cables."

This invention relates to an improved method of manufacturing strips or ribbons of zinc or alloys of zinc suitable for being employed for the above purpose.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 29.—N° 2381.

RADCLIFFE, James.—"Improvements in machinery or apparatus employed in the manufacture of iron "and steel."

This invention relates to certain improved apparatus and appliances to be employed when manufacturing iron or steel into bars, plates, rails, or other finished forms in accordance with an invention for which Letters Patent have been granted to the said James Radcliffe on the 30th January 1868, and numbered 321.

[Printed 2*s.* Drawings.]

A.D. 1868, July 29.—N° 2382.

ROBINSON, Henry Oliver.—(*Provisional protection only.*)—"A new or improved dredger."

The feature of novelty which constitutes this invention is the application of a helical or spiral cutter to dredging operations in lieu of the buckets at present employed.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 29.—N° 2383.

LISTER, Samuel Cunliffe.—"Improvements in the manufacture of cut pile fabrics."

The improvements relate to that class of cut pile fabrics which are woven together face to face and then cut asunder. The first improvement consists in arranging the reciprocating cutting knife to cut in one direction only. Secondly, weaving pile fabrics of silk, cotton, and other vegetable fibres, also wool and hair face to face in the grey and subsequently dyeing them; modes of effecting the dyeing and finishing are also described. The Specification also describes dyeing the cotton warp or weft before weaving, of silk velvets which are woven in the grey, also when pile fabrics woven face to face are made from wool or hair singeing and sizing the yarn before weaving; also modes of finishing such fabrics. Also using for the warp and weft of velvets a yarn made from a mixture of wool or hair and silk.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 29.—Nº 2384.

, JULIUS.—"Improvements in preserving animal and vegetable substances."
sional Specification describes means and apparatus for freezing. A long quadrangular tube or steep incline is divided by longitudinal and upright metallic partitions into passages alternately road. Up the narrow passages the chilling current is conveyed, and the matter to be frozen es slides on rollers down the broader passages, from the end of which when frozen they emerge p door (in some cases the main trunk may lie horizontal when the cases of frozen matters are d by endless bands). Directly a row of cases is discharged they are packed up in a case specially the purpose.
pressed atmospheric air is the chilling agent no partitions (but flanges only) are put on the

s described for maintaining a vacuum and condensing vapour or air. A special mode of ores of frozen packages when packed in bulk is also described.
. Drawing.]

A.D. 1868, July 30.—Nº 2385.

HOLME, JOHN.—(*Provisional protection only.*)—"Improvements in the valves of steam engines g and other purposes."
tion relates to steam engines for pumping and other purposes, and consists in making the valves rical and partly semi-cylindrical, the cylindrical part being for the steam port and the other part st port. The valves are connected to a spindle which is worked to and fro by an arm on the the steam cylinder. There are also passages in the semi-cylindrical part of the valves to allow haust steam to escape before the valve has completed its traverse.
l. No Drawings.]

A.D. 1868, July 30.—Nº 2386.

JSE, GEORGE, and McMINNIES, JOHN GORDON.—"Improvements in the construction of anufactories, warehouses, and other buildings."
tion refers, firstly, to buildings with arches, and consists in carrying girders from bay to bay g arches therefrom. The arches may be ordinary brickwork, but the inventors propose using the required shape and dimension. Secondly, in adapting wrought iron girders to cast iron ling across the mill.

. 4*d.* Drawings.]

A.D. 1868, July 30.—Nº 2387.

ALEXANDER.—"Improvements in the construction of watches, chronometers, clocks, and keepers."
ying the construction of watches, chronometers, and other timekeepers by forming the pillar solid piece with a curve to allow it to snap into the case and do away with screws to hold it; mainspring both as to depth and thickness to allow of even time being kept; the employment winding catch of a peculiar form which renders springs and their equivalent unnecessary to ce; placing the click under the barrel in a sink in the pillar plate to avoid being clogged or lirt; causing the outer coil of the flat pendulum spring to press slightly against the inner pin of obtain isochronism; obtaining an equal poise or balance of the pallets by means of an adjustable l attached to the pallet staff; forming the minute pin out of the solid plate, avoiding drilling thereby; obtaining greater bearing surface for centre wheel pivot by forming a recess in the set hand piece to allow of a projection on the pillar plate entering the same.
d. Drawings.]

A.D. 1868, July 30.—Nº 2388.

R, CARL HEINRICH.—(*Provisional protection only.*)—"Improvements in machinery for the re of paper."
ty in this case consists, first, in the substitution of endless bands of linen or cloth and india s under the wire work where the stuff enters upon it in order to retain the water longer in the dly, in substituting suckers or wipers of india rubber under the wire work for the vacuum box p. Thirdly, in fitting the dandy rolls with exhausting media. Fourthly, in forming, fitting, he coutch rolls and press rolls with india-rubber. Fifthly, in fitting the lower coutch roll with

a sleeper-roll and taking off the paper at about the point where the wire leaves the lower couch roll. Sixthly, in fitting the drying cylinders with endless bands of linen or cloth. Lastly, in substituting endless bands of metal running loose upon the glazing rolls for the ordinary loose plates of copper or zinc.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 30.—N° 2389.

LISTER, Samuel Cunliffe.—(*A communication from Jacinto Barran.*)—" Improvements in the manu-" facture of silk velvets which are woven face to face and then cut asunder, also in treating silk to be used " in such manufacture."

This Provisional Specification describes the so preparing the silk yarn, of which the pile is to be composed, that the knife which severs the pile shall break or partially break the silk in place of cutting it cleanly, and also describes removing from the yarn all acid or greasy matters which would eat or wear away the knife whilst cutting.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 30.—N° 2390.

ROBERTS, Thomas Humphrey, and CROSS, Benjamin Crocker.—" Improvements in apparatus for " retarding and stopping carriages."

This Provisional Specification describes improvements on the apparatus patented by Mr. Roberts on 9th December 1864 (No. 3066), and the improvements have for their object the preventing the breaks pressing on the wheels of a carriage when the horses are backed.

It also describes transmitting motion through leverage from the pole or shafts to the break blocks in place of directly as heretofore.

It also describes in two wheeled vehicles attaching the wheels to separate levers, which when the vehicle is backed causes the wheels to turn at an angle to one another, and so impedes their rotation.

[Printed, 1*s.* Drawings.]

A.D. 1868, July 30.—N° 2391.

DAVIES, George.—(*A communication from Hyacinthe de Font Réaulx and Amédée Barret.*) — (*Provisional protection only.*)—" An improved process for obtaining heliographic plates for printing."

Firstly, a positive or negative of the object desired to be reproduced is to be obtained in any known manner. The next process is to place behind a positive or negative a sheet of glass either ground, lined, or otherwise marked with any design, or wire gauze, woven fabric, or other substance capable of giving by transmitted light the appearance of hatching, or grains square or round, stippling, or other desired effect, and then take a photographic proof therefrom by transmitted light.

When the photographic proof of the subject with the hatched or stippled effect has been obtained, as above described, a very thin coating of bichromatized gelatine is to be poured carefully over the surface to impregnate the collodion therewith. Then a second coating of the same much thicker, the thickness of the latter varying according to the amount of relief desired to be obtained.

After desiccation it is exposed to light and then immersed in water. The image or picture is represented by reliefs and depressions.

The gelatine is then to be removed and transferred to another flat surface and rendered conducting by metallizing it by any known means in order to obtain therefrom by the galvano-plastic process a plate capable of yielding a great number of impressions equal in appearance to those produced by actual engraving.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 30.—N° 2392.

DAVIES, George.—(*A communication from Alfred Charles Garratt.*)—" An improved pile or portable " battery for generating electricity."

The object of this invention or improvement is to provide a portable, constant, and durable primary current pile or battery of great power both in quantity and intensity, yet capable of graduation and interruption; one not expensive nor liable to get out of order, free from destroying acids, easily cleansed, and ready for instant use anywhere with little preparation or delay.

The nature of the invention consists in a new arrangement of metallic bars of dissimilar metals so arranged together as to constitute a very compact yet powerful and constant pile or battery yet without cloths or any other porous substance essential in the structure of voltaic pile, and on the other hand without caustic acids, as employed in galvanic batteries so liable to get out of order, to slop over, and do damage whenever moved about.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 30.—Nº 2393.

, **John**, the younger.—" Improvements in apparatus for finishing or dressing flour."
ure of novelty which constitutes this invention is the covering of the drum of the machine in
flour is finished or dressed with wire gauze instead of silk as hitherto.
, 4d. No Drawings.]

A.D. 1868, July 30.—Nº 2394.

ORN, John.—" Improvements in machinery for dressing millstones."
ention consists in an improved arrangement and combination of mechanism. The mechanism
the stone and turns round a centre post secured to the stone, and consists of two sets of
slides at right angles to each other, one of the slides being parallel to the intended cuts; and
adjustable vertical slide is mounted that carries the pick or cutter, which is secured to one end of
ted upon by a spring) or to a spring, the other end of the arm or spring, being mounted upon a
vertical slide. The pick is lifted by a cam and is forced down by the spring, the force of which is
by a screw. The cam is driven by a band from a roller and other gearing. Rotating diamond or
ers may be also mounted upon the arrangement of slides above described in place of the pick.
ention also consists in mounting two or more picks or rotating diamond or other cutters upon the
s and actuated by the same or separate cams, and in making two or more cutting edges upon the
making compound picks, and in fixing two or more diamond or other cutters, adjustable in a
haft, so the several cuts or "cracks" can be made at the same time.
, 1s. 6d. Drawings]

A.D. 1868, July 30.—Nº 2395.

N, John Henry.—(*A communication from Joseph Spangler Machir.*)—(*Provisional protection*
An improved flame spreader and aerator for gas and other burners."
vention consists of a thin metal plate connected at its ends by a curved cross piece and having two
xible arms extending at opposite sides from the vertical portions of the plate, which clasp or grip
the burner and retain the plate thereon. The curved or arched portion of the plate is made sharp
r edge, and its outer edge has a V shaped groove formed around it.
, 4d. No Drawings.]

A.D. 1868, July 30.—Nº 2396.

R, Thomas.—" Improvements in distillation and in the means or apparatus employed therein."
vention consists in supplementing a condensing liquid after it has been operated as such with
heat to convert it into vapor in all respects similar to that which it is supposed to have previously
.
uid to be evaporated is contained in a close receiver, in the upper part of which is placed a series
ers communicating with each other and through which a heating medium, as steam, hot water, air,
successively caused to flow by which evaporation of the liquid in the receiver is effected. The
tained may pass down a tube into a chamber which may be called a condenser, and thence into
hamber which may be called a refrigerator both contained in the receiver, or the vapor obtained
away to act as a motive power, and thence be brought back to the condenser and refrigerator, and
to the receiver below the condenser for reuse.
d, 1s. 4d. Drawings.]

A.D. 1868, July 30.—Nº 2397.

N, John Coope.—(*Provisional protection only.*)—" Improvements in cannon and in machinery
nufacturing the same."
aking vent hole when not bouched, and plug hole for vent when vent is bouched with inner end
the bore widened into a conical or trumpet mouthed form to avoid the cracks which so frequently
that part.
g or forming the improved plug hole for bouching from or through the plug hole, and the vent
hole also from or through the muzzle of the gun.
ing the gun (without trunions) on ridge or bearing on carriage, and with guides on carriage, and
nd or strap to prevent movement, and with guides at the breech with means of elevation, and
n, and preventing gun from turning on longitudinal axis.
ng at the muzzle guns formed without trunions and with appliances for working the breech end.
d, 4d. No Drawings.]

A.D. 1868, July 30.—N° 2398.

GWYNNE, John, and GWYNNE, Henry Anderson.—" Improvements in the construction of and " mode of employing and driving centrifugal pumps and pumping engines, and in surface condensers to " be employed in conjunction therewith, parts of which improvements are applicable to other purposes."

This invention relates, 1st, to improvements in the construction of centrifugal pumps, by constructing the impeller without side discs as heretofore and forming them of cast steel.

2nd. In a novel contrivance or arrangement of parts of frictional gearing, by which the groove or the projecting rib, or both of them, are formed of two discs capable of being drawn together by means of screws, or bolts and nuts, or a traversing central nut; and several of such pairs or sets of discs may be mounted upon the same shaft, and may be employed for the purpose of transmitting motion to other machinery than centrifugal pumps. 3rd. A novel mode of utilizing the heat-abstracting power due to the flow of water through the suction or delivery pipe of a centrifugal pump and such-like hydraulic machinery; and in a novel arrangement of condensing apparatus formed by encasing the suction or delivery pipe of the centrifugal pump, into which casing or chamber steam to be condensed is exhausted.

[Printed, 1*s.* Drawing.]

A.D. 1868, July 30.—N° 2399.

FIDLER, Thomas Claxton.—" Improvements in rolling stock of railways."

The object of this invention is to enable railway engines and carriages of long wheel base to travel with safety on sharp curves, and to avoid the lateral slipping of wheels and the sinuous oscillations of carriages; in order to effect this result each pair of wheels is to be mounted in a separate truck (and in some cases two or more pairs of wheels may be so mounted), and any number of such separate trucks, not less than by preference three, are connected to and support one carriage or engine frame.

In fixing the carriage frames to the trucks two systems may be adopted. Firstly, the frame may be fixed to the centre truck, of which it forms a part or an extension, the centre axle being fixed at right angles to its longitudinal axis, and the frame rests on the two end trucks, being connected thereto with swivelling joints; or, secondly, the frame may be swivelled on the two end trucks on centres in the axis of the main frame and over the middle of the axle of each end truck. The middle truck is jointed at its two ends to the inner ends of the two trucks, the jointing pins being situated midway or nearly so between the respective axles and in the longitudinal axis of each of the three trucks. The middle truck is then allowed to move laterally on rollers and a tram, or by a rack and pinion arrangement. By these arrangements the wheels are permitted to follow the various curves of the line, their axles always forming radial lines from the centre of the curve.

[Printed, 1*s.* Drawing.]

A.D. 1868, July 30.—N° 2400.

FOX, Charles Douglas.—(*A communication from Hugh Baines.*)—" Improvements in the manufacture and " method of repairing railway rails and other iron of permanent way, and in the machinery to be employed " therein."

This invention relates to the manufacture of rails, wings, crossing points, and other iron of the permanent way of railways from old rails or other iron, to the means of improving and reparing rails, and to the machinery to be employed therein.

These objects are effected in two ways, firstly, by dies cut on rolls; and, secondly, by dies cut in faces actuated by a power hammer.

The machinery for rolling consists of a pair of horizontal shafts worked by toothed gearing, and on which shafts and rings are fixed containing all the various shaped dies required to produce the rails and other irons; thus every roll may be performing its own special purpose at the same time.

The dies are applied to the hammer machines for effecting similar results, and especially for welding railroad crossing points, and for bracing the ends of crossing points with steel or other metal.

[Printed, 8*d.* Drawing.]

A.D. 1868, July 31.—N° 2401.

ROYLE, William Thomas.—" Improvements in machinery or apparatus for folding or pleating paper " for pattern cards applicable also to folding or pleating woven fabrics."

According to this invention the paper or other material is carried by reciprocating blades alternately to two sets of jaws or clamps opened and closed by cams, the folds or pleats being effected by the forward and backward motion of the said blades.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, July 31.—Nº 2402.

Rederick Allen.—" Improvements in carding engines."
ention relates in the first place to the enclosure of the licker-in. Circular end shells are employed
ed in one piece and fitted to the pedestals, or one part of each shell is formed on the pedestal and
art on the cap thereof. The hinged cover and undercasing are fitted to the said shells, and the
nnected to the fly plate by an intermediate V shaped plate. The flexible bend is made long enough
e said fly plate. A modification of the above described end shells and hinged cover is sometimes
the rollers and clearers of carding engines. The brackets to carry the grinding roller are mounted on
of the licker-in pedestals, and are fitted with a screw adjustment. This arrangement is also applied
ers and clearers, in which case they may be ground either together or seperately. To prevent
e of oil from the bearings to the card covered surfaces of the licker-in rollers and clearers, a
each journal between the bearing and the roller is grooved, and a recess is formed around the
intercept the oil. A circular " bend " or frame is used on each side of the carding engine to carry
nd clearer brackets or to guide travelling flats, and also to carry the under casing, the said frame
eye in the centre to fit on the boss of the main cylinder pedestal.

, 1*s.* 6*d.* Drawings.]

A.D. 1868, July 31.—Nº 2403.

FE, Joseph.—" Improvements in machinery for increasing the motive power of steam engines
other motive machines."
ention consists in an arrangement of cranks of unequal stroke, and levers or arms of unequal
r increasing the motive power of steam engines and other motive machines. A crank is fixed on
ient part of the prime mover or motive power of any length of stroke in connection with a lever
any length of fulcrum, the other end of which lever or arm has a shorter fulcrum connected with a
orter stroke on to the second motion or any other part, as the case may be, and connecting th
spon-gearing on to the following motion.

, 1*s.* Drawings.]

A.D. 1868, July 31.—Nº 2404.

stin Goodyear.—" An improved artificial compound, chiefly designed for use as a substitute
-rubber or caoutchouc."
invention relates to the combination of linseed oil, cotton seed oil, and either castor or coal oil,
coal tar, asphaltum, litharge, magnecia, or some of these materials or their equivalents, and con-
employment of sulphuric or other acids with these ingredients for the purpose of enabling the
yed therein to better combine together, whereby also I can materially diminish or wholly or almost
pense with the amount of sulphur required in the said compound

, 4*d.* No Drawings.]

A.D. 1868, July 31.—Nº 2405.

STEEN, James Frederick.—" Improvements in means or apparatus for the preservation of
substances."
purpose a safe or receptacle is employed in which are placed the substances required to be pre-
ough an opening provided with a suitable door or cover, which when closed forms a tight joint
by hermetically seals the safe or receptacle, to which are applied suitable safety and pressure

ection with such safe or receptacle is employed; apparatus for generating carbonic acid gas, such
consisting of two strong vessels provided with suitable covers and made of any suitable material
gth and connected together at their lower parts by a pipe or tube and at their upper parts by
pe or tube, to which a stop cock is applied in order to cut off the communication between the
s of such vessels when required.
f these vessels is placed any suitable carbonate and in the other any suitable acid, the level of the
not acting on the carbonate being maintained at a point slightly below the bottom of the
Another pipe passing from the upper part of the vessel in which the carbonate is placed dips
el containing water, the upper part of such vessel above the water level being connected to the
pipe or way having a suitable stop cock applied thereto.
the apparatus in action the door or cover of the safe or receptacle is securely closed, the passages
ned and the acid is caused to rise into the vessel containing the carbonate until the carbonate is
therein, thereby generating carbonic acid gas, which after passing through the water passes away
or receptacle, such safe or receptacle being provided with a suitable outlet for the escape of the air
as carbonic acid gas is supplied thereto.

When a suitable pressure has been obtained the acid is caused to leave the carbonate and thereby stop the supply of carbonic acid gas.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 31.—N° 2406.

MACABIES, Paul Narcisse Joseph.—" Improvements in water-feeding apparatus for boilers."

This consists in new apparatus for feeding water to boilers; three arrangements are described applicable rsepectively to fixed and movable engines and locomotives.

1. Two cylindrical chambers or receivers are hung to a bent double lever oscillating on a vertical column. These receivers each carry at their lower parts a socket with two compartments articulated by stuffing boxes to 2 square tubes at the extremities of 2 tubular arms connected with 2 valves on either side of the column, forming with the bent lever a parallelogram which always keeps the receiver vertical. One of the compartments is prolonged upwards in the receiver by a tube, the other opens at once into the bottoms of the same compartments. The two valves oscillate on two sockets fixed on the base of the columns having double compartments and four orifices; they distribute water and steam in the receivers. The valve or cock distributes the steam by 4 orifices separated by a partition, the 2 lower communicating with the boiler and the two upper with the atmosphere or feed reservoir. The other distributing cock is similar and distributes water in the apparatus, 2 orifices communicating with the interior of the column which is in communication with the feed reservoir and two with the boiler. To prevent shock in the apparatus an oscillating cylinder is provided furnished with an air or water piston which oscillates on two trunnions on the top of the column. The rod of the piston is forked at both ends to receive the great lever, at each [*end**] of which are the links to which the two receivers are hung, and only allows them to fall in proportion to the arrival of air or water. To obtain a constant level the end of the pipe which conducts the steam into the apparatus is placed at a certain level. The column is made hollow in order that it may fill with feed water and act as a condenser when the water is drawn from a lower level. When water is drawn from a higher lever the hollow column may be filled with steam instead of water, and a substitute may be provided for the ordinary safety apparatus of boilers by means of a float and rod, the latter free of all stuffing boxes. When the feed is obtained from cold water in a lower reservoir 3 pipes are used; when it is obtained from warm water in an upper reservoir 4 pipes are used, and in the latter case the steam pipe terminates in a conical form and is carried down to the bottom of the reservoir opposite the supply pipe. The constant level is maintained by a pipe carried down into the boiler to its normal level enclosed in a case perforated with small holes. In order to effect the feeding of several boilers by one apparatus and at the same time preserve a constant level in each boiler an annular float is placed in each boiler having a rod working in a tube communicating with the cocks of the receivers and actuating a valve on the top of the boiler opening downwards. This arrangement works automatically.

2. A chamber or receiver has at its upper and lower ends two pipes on which act two sliding valves working on the same rod attached to an eccentric mounted on a horizontal shaft or axle carried through the chamber; this shaft receives a slow motion from the steam engine; the upper valve distributes the steam and the lower the water. The water enters by an orifice in the lower valve and escapes by one at the bottom of the chamber; the steam enters by an orifice on the outer side of the upper valve and escapes by one on its inner side. This arrangement works mechanically by power from the steam engine and is placed at a superior level to that of the boiler.

3. This arrangement takes the form of a pump with 3 pistons of different diameters fixed on the same rod and working in the same cylinder. The spaces above and below the largest piston form two receivers into which steam enters through a slide valve placed on the side of the cylinder in which the pistons work; the largest piston collects the feed water by the intermediation of a smaller piston at the lower end of the rod furnished with a valve at its lower side. The smallest piston works in a much narrower part of the cylinder, and is moved up and down by steam pressure. Opposite to the slide valve is another valve. A tappet fixed on the top of the piston strikes when the pistons are near the end of their stroke a horizontal rocking lever attached at its other end to the rod of the slide valve. Another tappet on the piston rod also strikes the horizontal lever when the pistons are near the top of their stroke. In order that the valves may be completely opened an arm depending from the horizontal lever is formed with teeth which take into a pinion, on the axis of which a weighted lever is mounted. This arrangement is suitable for locomotives.

[Printed, 10*d*. Drawing.]

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* The word "end" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

A.D. 1868, July 31.—N° 2407.

SHARPE, Benjamin.—" Improvements in the construction of ships or vessels and batteries and in the " appliances and means for firing and working great guns."

This Provisional Specification describes modes of mounting great guns so that they may be raised into position for firing and lowered into a place of safety for loading. Also modes of checking the recoil. Also modes of constructing bowsprits and masts. Also modes of constructing batteries and ships of war. Also an instrument to aid in pointing a gun.

[Printed, 8*d*. Drawing.]

A.D. 1868, July 31.—N° 2408.

KITTOE, George Domenicus, and **BROTHERHOOD**, Peter. — (*Provisional protection only.*)— " Improvements in apparatus for cooling, heating, or tempering fluids."

Consisting of an arrangement of tubes placed in tiers and communicating with one another, the fluid to be condensed or cooled, or to be used for heating, passing along the centre tubes, and the cooling fluid, or fluid to be heated, passing in the opposite direction along the annular spaces formed by the centre and outer tubes.

Also of a means of cleaning these tubes when required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 31.—N° 2409.

IOULE, Henry.—" Improvements in fire-places and furnaces, and in the mode of feeding the same with fuel."

Displacing the fire bars of furnaces and fireplaces and setting below the same a reservoir for water and fuel, the latter of which serves to support the incandescent fuel, and may be forced upwards to feed the fireplace.

[Printed, 10*d*. Drawing.]

A.D. 1868, July 31.—N° 2410.

DRINHAUS, Rudolph Eugen.—(*A communication from Charles Baunscheidt.*)—(*Provisional protection only.*)—" A new (or improved) instrument to be used in the treatment of rheumatism and other diseases."

This instrument is to be used in the treatment of rheumatism and other diseases in conjunction with an oil or liniment, and more particularly with the oil known by the name of " Oleum Baunscheidtii." It consists of a series of needles projecting from the face of a metal block or puncturer enclosed in a suitable casing provided with a hollow stem, through which passes a spiral spring attached to the puncturer, said spring terminating in a handle which projects from the end of the stem. In using the instrument the needle end is applied on the skin and the spring then drawn out by means of the handle, which is suddenly released, causing the needles to be projected so as to slightly puncture the skin.

The oil or liniment may then be applied by painting or otherwise, as usual.

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 31.—N° 2411.

YMINGTON, William Weldon.—(*Provisional protection only.*)—" Improvements in machinery for " cutting up or reducing loaf sugar."

The sugar loof is placed on a tray at one end of the machine, and is fed up to the cutting knives by means of fingers mounted on an endless chain below said tray. The knives or cutters are mounted in vertical standards, the upper knife having up and down motion imparted by a crank on the driving shaft and connecting rod, said driving shaft being provided with a fly wheel and operated by hand or other power. The lower knife has also a slow up and down motion imparted to it.

These knives cut off a slice of sugar from the loaf, which falls on a hinged flap in front of a disc having a series of cutters or teeth projecting horizontally therefrom, and so placed as to cut the sugar into cubes by the aid of a second disc having to and fro motion imparted by the driving shaft and provided with similar teeth set at right angles to those of the first disc, between which the slice of sugar is received and cut up as described.]

[Printed, 4*d*. No Drawings.]

A.D. 1868, July 31.—N° 2412.

LEALE, Andreas Franz.—(*Provisional protection only.*)—" Improved apparatus and means for pre- " venting incrustation in steam boilers and other vessels."

The novelty of this invention consists in connecting (by preference to the outside of a steam boiler or other vessel) an apparatus so connected to the boiler or other vessel as to ensure circulation of the water through it, and in so doing to arrest, hold back, and separate the earthy and other solid matters contained in the water and thereby to prevent incrustation in boilers and other vessels. I propose to effect this by placing in the said apparatus any fibrous substance or material suitable for the purpose.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 31.—N° 2413.

MORITZ, Hermann, and REINACH, Jacob.—"A new file-planing machine."

This invention relates to a machine for planing files worn out by use, so as to render them fit for being re-cut.

A planing steel or cutter is firmly fixed in a stock on the upper part of the frame of the machine above the file to be planed, and the file is conducted beneath it in a curved path so as to bring the varying level or taper of the file under the planing steel. Parallel rocking shafts are set on axles and elevated or depressed by a crank motion; by these means a sliding carrier gripping the file carries it under the planing steel, the pressure of which is regulated by a weight or lever acting above it.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, July 31.—N° 2414.

MORITZ, Hermann, and REINACH, Jacob.—"A new file-cutting machine."

According to this invention, the object of which is to cut files in imitation of hand cut files, but more accurately, the hammer or cutter is set on an axis which oscillates so as to cause the hammer to rise and fall by a tappet motion, and cut the file, which travels to and fro beneath the cutter, thereby effecting the cross or angular reversed cuts or grooves in the file, which rests on a cushion of lead on an anvil moved by bevil gearing.

To regulate the position of the file blank on the lead cushion, the point or handle of the file blank rests in a socket in a fork enclosing the anvil, this form being capable of lateral motion on a pivot.

The fixing in position of the chisel is the most essential part of the invention. For this purpose the chisel is held in the required angle by pincers lined with india rubber, travelling in a slide set in a bow or fork turned by a shaft. This is for the lower blows, but for the upper blows the bow is revolved and the action reversed.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, July 31.—N° 2415.

HARVEY, George.—(*Provisional protection only.*)—"Certain improvements in holding and attaching "cravat bows or fronts to shirt collars, which said improvements are also applicable to the use of ladies for "encompassing or attaching scarfs or kerchiefs or other articles of dress."

The novelty of this invention consists in providing ready means for engaging and attaching gentlemen's neckties to shirt collars, as well as the engaging and holding in position neck scarfs, and in the application of similar parts of the same to ladies' apparel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 31.—N° 2416.

TAYLOR, Alfred.—(*Provisional protection only.*)—"Certain improvements in fastenings for brooches, "buckles, and other like articles."

The novelty of this invention consists in providing a spring hook or catch for securely holding the points or free ends of brooch pins or buckle chapes, and yet permitting such pins or chapes to be readily freed for the purpose of disconnecting or removing the brooch or buckle when desired.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 31.—N° 2417.

HEATON, John.—"Improvements in the treatment of cast iron."

My improvements relate to the purification of pig or cast iron, and consists in subjecting pig or cast iron contained in a suitable furnace or converter, by preference converters such as those described in the Specification of Letters Patent granted to me on the 17th March 1866, No. 798, and the 3rd May 1867, No. 1295 or in any other arrangement either with or without the conjoint employment of a blast to the action of nitrate of soda or nitrate of potash or other suitable nitrate in such quantity as that the impurities contained in the pig or cast iron shall be partially or wholly removed with the abstraction of the smallest proportion

carbon practicable. My object being to purify the pig or cast iron, and not to convert it into steel or
lleable iron.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 31.—N° 2418.

ATON, John.—" Improvements in the production of steel and other compounds of iron and carbon
resembling steel."

My invention relates to the production of steel, and consists in the employment for such purpose of the
rified or converted pig or cast iron, or the combination of iron and carbon such as results from the action
nitrate of soda or nitrate of potash upon cast iron when in a molten state, either alone or in conjunction
th a blast, and contained in a converter, by preference converters such as those described in the Specifi-
ions of Letters Patent granted to me on the 17th March 1866, No. 798, and the 3rd of May 1867,
. 1295, or in any other converter or furnace together with metallic iron such as sponge iron, scrap, bar, or
her form of metallic or malleable iron. The product resulting from the action of nitrate of soda or potash
on cast or pig iron as before mentioned is to be melted in a suitable furnace or crucible, and metallic iron
to be added thereto and dissolved therein or alloyed therewith, until the molten metal shall have attained
ch a composition as may be required either for the production of steel or other compounds of iron and
rbon resembling steel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, July 31.—N° 2419.

UNT, Thomas.—(*Provisional protection only.*)—" Improvements in breech-loading fire-arms."

Making the barrels of breech loading in two separate parts, the rear one of which turns upon trunnions
receive the cartridge and then descends so as to fit on to the four part of the barrel again, a screw action
rving to tighten in its place. A hammer with a projecting pin serves to knock out the spent case from the
r chamber before inserting the next charge.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 1.—N° 2420.

UTRIDGE, Joseph Edlyn.—" Improvements in equilibrium slide valves."

The slide works between two castings whose faces are parallel to each other, in which ports or passages
e formed for the inlet and outlet of steam.

It can be easily applied to every kind of engine.

It dispenses with the pressure of steam and vacuum.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 1.—N° 2421.

ICHOLSON, Charles Joseph Lindsay.—(*A communication from Edward Jenkins.*)—(*Provisional
tection only.*)—" Improvements in closing cans, barrels, kegs, and other similar receptacles."

This invention consists of an arrangement of 2 metal plates and a screw with an india-rubber washer (or
such material) between, so arranged that upon being inserted in the opening of a can, barrel, or any
milar receptacle, the two plates are screwed up together, one plate being below the opening and the
her above, and having the washer introduced between the upper plate and the opening the whole may be
rewed up and the opening or aperture rendered secure and airtight.

[Printed, 6*d.* Drawing.]

A.D. 1868, August 1.—N° 2422.

KEAN, James Asbury.—(*A communication from William Rudolphus Landfear.*)—" Improvements in
machinery for manufacturing metallic eyelets."

My invention relates to machinery for manufacturing metallic eyelets for stays, corsets, shoes, and other
icles of clothing for fastening leather and rubber belting, for securing papers, and for other like purposes;
the said invention consists chiefly in the peculiar combination of dies, punches, and cutters, whereby
several operations which each eyelet has to undergo are performed simultaneously in different sections
the machine, so that any desired number of eylets may be finished in the same time that would be
uired to produce one single eyelet. Reciprocating punches arranged in combination with a rotating
inder perforated with series of holes or dies give to the eyelets the required form in the successive stages
their manufacture. The eyelets are produced from strips or sheets of brass or other suitable metal, and
h strip is first subjected to the action of one series of dies and punches, and is then passed under the
t series, and so on, till brought to the required form, while at the same time fresh strips introduced

between the first set of dies and punches follow the strip first introduced. Each strip as it passes from t last series of dies is brought into contact with a cutting cylinder which removes the ends of the eyelet The strips are annealed between the successive operations. Feeding and receiving rollers or other equivale mechanism may be arranged in combination with the dies and punches.

[Printed, 2*s.* 6*d.* Drawings.]

A.D. 1868, August 1.—N° 2423.

SAMUELSON, Martin.—(*Provisional protection only.*)—" Improvements in hydraulic press boxes."

This invention consists in strengthening cast iron hydraulic press boxes by employing a plate of wrough iron or steel for the lower part instead of cast iron as heretofore, rivetted or otherwise secured to the upp or cast iron portion. To the said wrought iron or steel plate a strong angle iron is rivetted forming th open ended box usually cast in one with the upper portion; by these means great additional strength i given to the boxes to resist pressure.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 1.—N° 2424.

WILKIN, Marmaduke, and CLARK, John.—" Improvements in steam boilers and furnaces, in part " applicable to surface condensers of marine engines."

Constructing steam boilers by successive pairs of plates of metal bolted together.

Applying a modification of the arrangement to the furnaces, and a modification to make surface condensers for marine engines.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, August 1.—N° 2425.

ARNOLD, Alfred.—(*Provisional protection only.*)—" An improved fastening for buttons, studs, sol- " taires, brooches, and other articles to which such fastening may be applied."

This invention consists in forming the one part of the fastening with a tube or socket piece fixed to a plate or to the article; a second part, consisting of a split shank secured to a plate, stud, or portion of the article, and formed with an enlarged end forming the fastener, the split shank acting as a spring and sliding in and out of the socket or tube of the other part.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 1.—N° 2426.

GEOGHEGAN, Charles.—" Improvements in self-acting regulators, and in the cocks or taps to the " same for supplying fluids at high pressure, and preventing the bursting of cocks, pipes, or taps under " ordinary circumstances, or from the effects of frost."

The object of this invention is to admit water into cisterns at high pressure and maintain it at a fixed level, so that when any is drawn off an equal quantity is admitted, the cock closing when the standing level is attained.

Inside the cistern at the highest altitude in a building is fixed an inverted open air vessel, which is sunk below the surface of the water, and having a small opening in the top only, communicating with a small air tube reaching to a second and closed vessel having a connection at the top and bottom only, the air pipe being attached securely to the upper vessel, the bottom one being united to a vessel having an open top, in which water is allowed to stand at a fixed level, determined by an overflow tap in the side of the vessel, a compensatory reservoir being attached to supply waste by evaporation, the falling of the ball causing the tap from the same to open.

This compensator is placed under the high pressure cock so as to receive the droppings from it.

An air ball is made to rise and fall on the surface of the water in the open vessel by means of the condensed air in the inverted receiver, by the pressure of the head of water above it in the highest cistern acting on the surface of the water in the closed vessel, and causing the water to rise in the open vessel.

The float is connected with the short end of a lever passing through the shank of the high pressure cock, which is situated outside the building or in the lowest floor or basement, the long end of the lever has a weight attached to it of sufficient power to shut off the cock when the ball at the other end has been floated up, the rise and fall of the ball causing the opening and shutting of the cock.

The lower vessels may be united so as to form one vessel having a central division open at the bottom to economise space, as an expanding vessel, the top rising and falling by the action of the condensed air, and thus causing the action of the ball.

All the pipes and apparatus being made air tight, the apparatus is placed in the ground or coated with non-conducting medium to prevent freezing when placed outside a building.

r to prevent the pipes bursting in frosty weather a minute aperture or boring is carried through
k or spindle of the high pressure cock, and also through the casing in which the spindle works,
arranged that these communications can only correspond when the cock is completely closed, so
the fluid run out of the rising main, and leave the pipe empty when the cock is closed and the
in motion.
ter in the open vessel is covered on the surface with fish oil, which prevents evaporation.
d, 1*s.* 4*d.* Drawings.]

A.D. 1868, August 1.—N° 2427.

Y, George.—" Improvements in ships' logs."
vention consists of a machine for measuring the distance run by a ship at sea in a given time, and
g the "leeway" made by such ship, provision being also made to prove the same by the mariner
ne he chooses when in use, any errors found being corrected thereby and a true reckoning ensured,
ating the difficulty hitherto found in the use of existing arrangements from the incessant changes
an from storm to calm.
d, 10*d.* Drawing.]

A.D. 1868, August 1.—N° 2428.

John.—" Improvements in the preparation of food for horses, cattle, and other animals."
od is prepared by taking grain suitable for the particular class of animals, grinding it and mixing
, chopped hay, straw, chaff, or other cheap ingredient. This mixture is made into a paste by
on of water with a little salt in it and fermented with yeast. The paste is made into cakes or
l baked, and the preparation of the food is completed by breaking the cakes or loaves as required

d, 4*d.* No Drawings.]

A.D. 1868, August 1.—N° 2429.

ON, Henry Oliver.—" Improvements in dredging machines."
ture of novelty which constitutes this invention is the application of a helical or spiral cutter to
operations in lieu of the buckets at present employed.
d, 1*s.* 2*d.* Drawings.]

A.D. 1868, August 1.—N° 2430.

LL, Samuel.—" Improvements in the means or apparatus for unloading coals from railway
s."
ention is chiefly applicable for transferring coals from railway trucks into barges. I provide a
e enough to receive the contents of two or more trucks at a time, and place hinged flaps with
es at the bottom end of said shoot, supported horizontally by chains and pullies, and serving to
e flaps as desired. Hinged doors or gratings are also suspended in the inclined shoot for checking
n its descent.
l first accumulates on the horizontal flap, which is then lowered slightly by the chains from time
discharge a small proportion of the coal, the shoot being never empty until the whole of the coal
l from the trucks. The coal thus falls in a body to prevent breakage.
ent the coal falling on the rails I place inclined boards thereon hinged or otherwise which conduct
into the shoot.
d, 10*d.* Drawing.]

A.D. 1868, August 1.—N° 2431.

Y, Joseph Rodney.—(*Provisional protection only.*)—" Improvements in looms for weaving."
vention relates to certain improvements in that class of looms wherein the shuttle is driven across
y pneumatic pressure. A pump or collapsible air vessel is applied to each end of the sley beam
e or underneath, and an air passage is formed from the air vessel within the beam into the shuttle
e air vessel is contracted or collapsed and drawn out by means of attachments directly actuated by
projection on the second motion wheel of the loom or other convenient wheel; and this stud or
regulates the discharge of the shuttle at the proper time, when the receding beam approaches the
also liberates the shuttle by a pall or by a valve.
d, 4*d.* No Drawings.]

A.D. 1868, August 1.—N° 2432.

BAILEY, Lucius Curtis.—"Improvements in drawing pens and compasses."

The object of this invention is to effect the proper adjustment of the blades of drawing pens and compasses by an indicating screw-head, and by a series of divisions and numbers in connection therewith, by which means any thickness of line can be produced without the necessity of testing the instrument.

The head of the adjusting screw is divided into radial spaces with numbers thereon, and a medial indent is cut on the upper blade, in line with which one of the radial divisions is brought by the screw-head, and thus the width between the points of the pen is accurately indicated.

In order to supply ink to the instruments an ink feeder is to be attached to the pen.

[Printed, 6*d.* Drawing.]

A.D. 1868, August 1.—N° 2433.

SHORE, George Nathaniel.—"Improvements in railway breaks and in increasing adhesion of the "running and driving wheels with the rails of railways."

This Provisional Specification describes placing on or driving into the face of the wooden break blocks ordinarily used nails, screws, or pins."

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 1.—N° 2434.

BOUSFIELD, George Tomlinson.—(*A communication from Thomas De Forest.*)—"Improvements in "bindings for skirts."

This invention relates to the binding of ladies' dresses, and consists of a binding material that presents an edge of india rubber or other flexible material impervious to water below the edge of the skirt to protect the same from wear by contact with the floor or ground.

[Printed, 6*d.* Drawing.]

A.D. 1868, August 3.—N° 2435.

RENAUDIN, Stanislas Réné.—(*Provisional protection only.*)—"An improved offensive and defensive "war machine."

This invention consists of a species of screen made of one or more sheets of iron provided with sight holes for reconnoitering the enemy and small embrasures for the troops firing through under cover, these latter openings being provided with movable doors, so that they may be closed after firing therefrom.

The sheets of iron, which are concave on the surface exposed to the enemy, are mounted on a frame moving on wheels, and so arranged that they can be folded together for facilitating transport, each sheet being connected by strong hinges, the whole supported by props or stays (when developed), which may be sloped at any desired angle.

The apparatus may be arranged in the form of a polygon, hexagon, or other form, thus constituting a fortress which could completely check a charge of cavalry; and in camp would serve as a tent by furnishing it with a centre pole and canvas.

Or in lieu of the single sheets they may be doubled and between the spaces tow, earth, sand, or other material placed, which would effectually resist the impact of the most powerful projectile.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 3.—N° 2436.

GARRETT, Henry William, and HOLCROFT, George.—(*Provisional protection only.*)—"Certain "improvements in breech-loading fire-arms and ordnance."

Our invention consists, first, in opening and closing the cartridge chamber of breech-loading fire arms and ordnance by means of a sliding bolt fitting in the end of the barrel.

Secondly, in exploding the cartridge by means of a striker which is pushed forward by the nipple and spindle acting on a triangular block or wedge acting on the end of the striker.

Thirdly, in drawing the shell of the exploded cartridge out of the end of the barrel by a catch acted upon by the sliding bolt above referred to.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 3.—N° 2437.

WILSON, Charles.—(*Provisional protection only.*)—"Improvements in apparatus for reefing and furling "fore and aft sails."

ɪr end of the boom which revolves is fitted with a worm wheel and worm actuated by a crank he outer end of the boom is fitted with a collar having a loose ring on it by which that end is

The mast hoops are furnished with rings having a portion cut away to allow the sail to enter, ɪe being held within the rings.

4d. No Drawings.]

A.D. 1868, August 3.—Nº 2438.

HOMAS.—" Improvements in desks for schools."

visional Specification describes constructing desks such as are used in schools with hinges that ɪf the board which forms the desk being placed in different positions and retained there by stops es so as to make it suitable either for a writing desk, a flat table top, or a back to the seat to attached.

10d. Drawing.]

A.D. 1868, August 4.—Nº 2439.

WILLIAM.—(*A communication from Louis Edouard Rivot.*)—" Improvements in the treatment of ɪs, argentiferous, and other ores."

ɪvention there are two modes of treating ores, one of which relates to auriferous and argentiferous ning copper from which it is required to separate gold, silver, and copper. The other mode is ɔo gold and silver ores in which the copper is not required to be separated.

ɪrst mode iron pyrites are used to cause by the action of superheated steam the expulsion of rhole of the arsenic and the antimony, thereby facilitating the requisite treatment of the residuums

he second mode the ores are mixed with oxyde of manganese, oxyde of iron or pyrites roasted t and submitted to the action of superheated steam in order to obtain the result (common to ɪ of treatment), viz., the extraction of the whole of the gold and silver in the state of metal.

1s. 8d. Drawings.]

A.D. 1868, August 4.—Nº 2440.

ILLE, HENRI ADRIEN.—(*A communication from Wilhelm Wiesmann.*)—" A new and improved ɔf preserving meat, and the apparatus connected therewith."

ention relates to an improved process of preserving meat by the combined use of saltpetre, olive arcoal, and to an apparatus connected therewith, which is divided into compartments wherein the ɪced.

8d. Drawing.]

A.D. 1868, August 4.—Nº 2441.

ILLE, HENRI ADRIEN. — (*A communication from César Corron.*) — (*Provisional protection only.*) vements in the process of dyeing textile materials, and in the apparatus connected therewith."

ention relates to the use of sucking and forcing pumps as a substitute for hand-labour in the erations preliminary to the dyeing, the dyeing process itself, and the drying of silk, cotton, wool, ɪextile materials.

4d. No Drawings.]

A.D. 1868, August 4.—Nº 2442.

.NN, ADAM LEWIS.—(*Provisional protection only.*) — " Improvements in yards and parts con- herewith for carrying ships' square sails."

ɔrovements relate to when the sails are capable of being wound on to rollers in forming the yards receive within them such rollers and their sails, the yards having slits or longitudinal openings sage of such sails.

ɪ means the sails when not in use are better protected from the weather.

4d. No Drawings.]

A.D. 1868, August 4.—Nº 2443.

URG, RUDOLPH. — (*Provisional protection only.*)—" Improvements in apparatus for the manu- ɔf bricks and other articles moulded or formed from clays and other plastic material."

nary pug mill is mounted above a series of moulds placed in a framing. The clay or other forced down to the lower part of the pug mill, where it enters moulds placed on a circular table ɔtary motion is communicated, and beneath which a wheel is placed; the moulds bear on this ɪey are thus made to rise so as to bring their upper surfaces against a fixed table, and the clay becomes compressed. The moulds pass on to a second wheel which also lifts them so as to cause the moulded article to project from its mould, when it can be removed. Inclined plates may be used instead of the wheels.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 4.—N° 2444.

MILLS, Benjamin Joseph Barnard.—(*A communication from George Harding.*)—" Improvements in " harvesting machines."

The invention relates to improvements upon that description of harvesting machines in which the rake arms are mounted on a vertical axis and are all caused to travel in the same path when gathering the standing crop towards the cutters, whilst one or more of them are, in addition to gathering the standing crop towards the cutters, caused to sweep the cut crop off the platform, the others being caused to travel above the platform clear of the cut crop thereon, cams being used to impart the various motions to the rakes or beaters. And the invention consists, firstly, in the employment of a moveable camway opposite the platform, so as to cause the arms of any one of these heads or beaters to descend and become a discharging rake by following the auxiliary cam for the time being, such moveable cam piece being placed under the control of the driver or operated automatically by the rake arms, a pointed washer being fixed to the bottom of the roller on the knee pieces to prevent the roller jarring against the moveable cam if out of position.

An extension slat or piece is attached to the outer end of each head so as to overreach and act in combination with the outer rim or fender of the platform.

The invention also relates to a mode of adjusting the platform to different heights of cut, and consists, first, of a pawl held in position by a spring and ratchet in connection with the sliding action of the ground wheel; and, secondly, of a vertical screw working through a projection attached to the axle plate of the main wheel and a nut carried by the gear frame; and, thirdly, to a mode of tilting the platform and cutting apparatus by attaching the rear end of the tongue to the gear frame by a bolt on which it vibrates, and attaching the tongue brace by a bolt to the inner shoe in combination with a bent lever, connecting rod, and slotted wedge, and a fender board with notches or steps.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, August 4.—N° 2445.

CRETIN, Claude Francois Constant.—(*Provisional protection only.*)—" Improvements in lamps for " burning gases or oils."

The feature of novelty which constitutes this invention is the arrangement and construction of lamps, whereby the products of combustion in passing through their outlets cause a partial vacuum and consequent continuous supply of fresh air to the burner.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 4.—N° 2446.

EVANS, Edward.—" Improvements in mills for grinding wheat, grain, and other substances."

According to this invention three vertical millstones are employed, the middle stone having a rotatory motion and the outer stones being incapable of rotary motion. The rotating stone is driven by a band passing over a pulley on its periphery or over a pulley on the horizontal shaft of the said stone. The rotating stone is provided with two grinding surfaces. Each grinding surface of the outer stones has half its furrows draughted at different angles to the other half. The outer stones are balanced by weights and are hung in universal joints or gimbals carried by adjustable frames. On the shaft of the rotating stone two worms are fixed, which by their motion convey the grain delivered by hoppers through casings in the eyes of the outer stones to the grinding surfaces.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 4.—N° 2447.

FRAZER, Joseph, and NAAR, William.—(*Provisional protection only.*)—" Improvements in the con- " struction of mattresses and camp beds."

A spring mattress capable of vertical contraction by straps and fitted when required with legs to form a bedstead.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 4.—N° 2448.

, Alfred Vincent.—(*A communication from Michael Joseph Stein.*)—" Improvements in boot e sewing machinery."

ention has reference to boot and shoe sewing by the crochet stitch, a barbed needle and a coverer . The improvements relate to the securing and adjustment of the last to the sewing mechanism, he undulations of the work, to the means of resisting the drag of the needle, to the heating of the ad, to the regulation of the feed over an undulating surface, and to the introduction of a welt.

, 2s. Drawings.]

A.D. 1868, August 4.—N° 2449.

Frederick William, and CHALAS, Pierre.—" Improvements in friction clutches for the shafts of various kinds of machinery."

surfaces are forced into contact by hydraulic pressure acting on the back of pistons to which one ion surfaces is secured.

, 10d. Drawing.]

A.D. 1868, August 4.—N° 2450.

N, Cuthbert Greenwood.—" Improvements in machinery for making bricks and other moulded

ovisional Specification describes using a pug mill in combination with boxes or moulds set in a ving or sliding beneath a suitable aperture in the pug mill. Each mould as it is filled passes on comes beneath a fixed roller, when a piston which forms the bottom of the mould gives the pressure, the table moves on, the lid is raised, and the contents of the mould discharged. ode (in which the lids are dispensed with) is also described of pressing and scraping the contents ld.

, 1s. 4d. Drawings.]

A.D. 1868, August 5.—N° 2451.

ON, John.—(*Provisional protection only.*)—" Improvements in the manufacture of artificial

twenty hundredweight of carbonaceous material and from one to four hundredweight of the known as stearine pitch, palm oil pitch, or cotton seed oil pitch, or other animal or vegetable are mixed with from one to three hundredweight of chloride of sodium. The mixture of these s is effected in a pug mill or other analogous apparatus, and the resulting compounds formed into lls as may be desired.

l, 4d. No Drawings.]

A.D. 1868, August 5.—N° 2452.

), Thomas Ridley.—(*Provisional protection only.*)—" Improvements in the construction of ships ls of war."

ovisional Specification describes constructing an armour plated vessel with low shot proof sides and long battery on deck, the sides of which are at an angle of about 45°, and with an arched top; this constructed with heavy and long plates bent to the half section of the battery laid side by side and nd bolted together with strengthening pieces; this battery is enclosed by a light and watertight . It also describes constructing a central battery, and also one at the bow and one at the stern.

l, 4d. No Drawings.]

A.D. 1868, August 5.—N° 2453.

N, Alfred Vincent.—(*A communication from Lorenzo Sibert, Daniel Charles Elliott Brady, el Imboden, and Seth Maxwell Barton.*)—" Improvements in the manufacture of iron and steel."

ention consists, 1st, in the use of a flux composed of manganese and common salt (chloride of ith lime stone or shells, such flux being introduced into the furnace to or with the ore or iron and n the ore or iron during and after its fusion and whilst subjected to the action of the blast to e it.

y, running the molten metal into crucibles and placing them in a heating furnace and introducing g into the metal sulphate of magnesia.

d, 4d. No Drawings.]

A.D. 1868, August 5.—N° 2454.

SPARTALI, Nicholas Demetrius.—(*Provisional protection only.*)—" An improved mode of and apparatus " for propelling vessels through the water."

I employ a blast or blasts of wind produced from a blower constructed on the turbine principle, discharging such wind into the water from the rear or the sides of the vessel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 6.—N° 2455.

MILLARD, William.—" Improvements in looms."

Sinking various shaped grooves in back of shuttle box frame and providing guides of corresponding shape working in the grooves and fixed to the shuttle boxes. Also sinking various grooves in slay sword at one end and into cap securing slide at the other.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 6.—N° 2456.

CHURCHMAN, Henry.—" Improvements in apparatus for cleaning boots and shoes."

This invention has reference to rotary brushes for cleaning boots and shoes, and consists in constructing the concave brush surface thereof with a flat bottom and sides made to widen out up to a certain point and then to contract towards the rim over which the brush surface extends. The brush surface is made in segments fixed in separately between cheeks. The brush may or may not be provided with separate blacking and dirt brushes. A rotary brush is also described having an annular rounded brush surface upon a disc on the opposite side to that facing the crank handle, and if necessary a concave rotary blacking brush may be combined therewith.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 6.—N° 2457.

EDWARDS, Edmund.—" Improvements in pumps."

This invention consists in making single or double acting lift or force pumps with flexible rings instead of pistons or diaphragms, and flexible discs for valves, and so making and arranging the pumps and valves that they may be put together perfectly tight and ready for work with little or no fittings. And for force pumps, in making the joints upon which the handles turn so that they could be covered by flexible tubes, which will prevent the escape of fluids under pressure. And where acid fluids are pumped in making such pumps of earthenware or other material not liable to corrosion.

[Printed, 2*s*. Drawings.]

A.D. 1868, August 6.—N° 2458.

BENSON, Martin.—(*A communication from Charles Burley.*)—" Improvements in low water indicators " and safety valves for steam boilers."

The invention relates to improvements in safety valves and low water indicators, and consist in certain appliances for using the water from the boiler as a weight to hold the valve to its seat when the water is at its proper level in the boiler and indicate a deficiency of water in the boiler. This is effected by providing the valve with a chamber by making it of an elbow shape and furnishing the lower part of the valve with a tube extending from the valve into the boiler, so that the lower end of the tube will be under the proper level of the water, while another and horizontal tube serving as a lever and connecting with the one described by means of the chamber in the valve is attached to the side of the valve with its outer end turned up and furnished with a globe with an air cock in its top. The pressure of steam in the boiler acting on the surface of the water forces the water up the tube through the valve and along the horizontal tube into the globe; the air cock in the top of the globe is opened in order to let it fill when it is closed. The water in the globe and tube serves as weight to hold the valve to its seat, that is, as long as the water is above the end of the tube in the boiler, but when it falls below the end of the globe and tubing will empty and thus lighten the weight on the valve; steam will then blow off and indicate by both hearing and sight a deficiency of water.

A counterbalance lever and weight is employed for counterbalancing the horizontal tube and globe so that the valve can be arranged to blow off at high or low pressures of steam with or without the water empting itself from the tubing and globe. The counterbalance lever is attached to the valve opposite the horizontal tube and globe. The valve apparatus will be provided with studs for attaching and adjusting it to the valve pipe.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 6.—N° 2459.

ICE, Lewis.—(*Provisional protection only.*)—" Improvements in spring slides for candlesticks."

This invention consists in making the free side of the spring slides of candlesticks longer than usual, d making at the bottom of the said free side a stop which, when the slide is introduced into the candle-ck, comes against the other side of the slide, and thereby prevents the too great compression, or injury, breakage of the spring.

The stop described may either be made by bending or curving the bottom of the free side inwards, or by etting, or otherwise attaching a separate piece thereto. When the stop is made by bending the free side, curvature gives the said free side great elasticity.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 6.—N° 2460.

ARSON, William, SPURR, William, and BRADBURY, Hervey.—" Improvements in looms for weaving."

The novelty consists in—

The construction, application, and use of slidable tappets in combination with ordinary indicating apparatus working change shuttle boxes.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, August 6.—N° 2461.

ARGREAVES, James.—" Improvements in the manufacture of steel and iron, and in the preparation of materials and agents, and in apparatus to be employed therein."

First. During the manufacture of steel or iron when oxygen gas or air or gas containing oxygen is caused allowed to rise through molten cast iron I project into the converter or vessel a current of oxygen gas gas containing oxygen on to the surface, preferably downwards, and sometimes below the surface of the olten metal and slag. The oxygen or other gas is preferably heated.

Second. In the Bessemer process I use heated air, such air being heated in a coil of pipes acted upon by e hot gases evolved from the said converter.

Third (A). When making steel or soft iron by the use of such salts as yield oxygen, such salts are hereafter lled oxydising salts, I use a converter with an outlet opening formed in the bottom thereof. I close the id opening by a fusible plate or piece of metal or other material. When the oxydising salts have been ecomposed and the conversion effected the said fusible plate or piece becomes fused by contact with olten metal, and such metal is allowed to flow out at once into the mould or other receptacle; or (B) I lace over the said outlet opening a thin plate of iron or other material which melts or softens at the proper me and allows the metal to flow out as aforesaid; or (C) I provide a long closing plug which can be raised r lowered at pleasure after the conversion is effected.

Fourth. When making steel or soft iron by the use of oxydising salts I employ a converting vessel which erves also as a mould, hence called by me the mould-converter. It is made of any desired shape and lined ith a refractory substance, and is sufficiently deep to prevent the molten iron being projected over the top y the escaping gases during conversion; or instead of making it deep another mould is placed on the top in a inverted position. The steel or iron is allowed to solidify—it will be obvious the oxydising salts are first laced in the bottom,—and when required the sides of the said mould-converter are made in two or more ieces so as to be easily taken apart to free the ingot or piece.

Fifth. When making steel or soft iron from cast iron by the Bessemer or any other process in which oxygen s caused or allowed to rise through the molten cast iron I provide a dam or vessel to hold the cast iron s run from the blast furnace or cupola. The said dam or vessel is formed like the cavity in the bed of reverberatory furnace, and is covered. The molten metal is kept at a high temperature by flame from a ire or in the manner which is usual with a Siemans' regenerative gas furnace. The blast furnace waste gases re used as fuel in the latter. The molten iron is tapped into crane or other ladles and therein conveyed to he converters as required or run into the converters direct.

Sixth. Steel or soft iron is made from cast iron in a furnace in connection with a Siemans' regenerator, he waste gases from a blast furnace or cupola being used as fuel by preference. Reaction is caused whilst he molten cast iron is in the furnace by metallic oxides or oxydising salts.

Seventh (A^1). As means for withdrawing steel or iron from a reverberatory or other like furnace I employ tube or conduit led from the botton of the furnace to the outside of the furnace. The said tube is closed y ground coke, charcoal, or other suitable substances which can be tapped, a plug or rod placed against e inner end and led outside the furnace being used to regulate the rate of outflow (B^1); or I close the ner end of the said tube or conduit by a plug or valve connected to a rod led outside the furnace.

Eighth. When making steel or malleable iron by any of the processes in which air or oxygen or gas containing oxygen is caused or allowed to rise through fused iron I add to the said fused iron oxide of iron or manganese or lime, and I prefer that the said oxides or lime should be in a highly heated condition.

Ninth. When making steel or malleable iron by the Bessemer or other like process I add to the converter at the time air is being passed through the molten iron or mass or masses of oxydising salts prepared by moistening and drying or fusing and cooling either by themselves or mixed with oxides of iron or manganese or lime. The oxydising salts preferred are nitrate, nitrite, chromate, or manganate of soda, or potass or any of them.

Tenth. When making steel or malleable iron by the use of oxydising salts I dry the said salts and reduce them to powder. I then place them, preferably mixed with an inert or retarding substance according to Patent N° 1520, year 1867, at the bottom of the converting vessel. In some cases I do not mix the whole bulk of the salts with an inert substance, but place a layer of the latter over the former.

Note.—The term "steel" is used to cover refined or other iron intermediate between cast iron and malleable or soft iron.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, August 6.—N° 2462.

FREUTEL, HENRY FREDERICK, and ZOX, HENRY.—(*Provisional protection only.*)—"Improvements in "the manufacture of hats and caps and other coverings for the head."

According to this invention hats, caps, and other coverings for the head, such as collegiate caps, ladies' bonnets and hoods, are manufactured either completely or partially of a fabric of horse-hair or other hair, with or without the admixture of cotton, silk, or wool, such fabrics being used in a double thickness by preference, with the weft of one layer at right angles to the weft of the other.

By these means the hat will not break by a blow, but will yield and spring back to its proper position. The hat may be covered with any external fabric, such as silk, woollen, or felt. Gossamer may be added to the hair, and the whole may be stitched or cemented together with gutta percha or india rubber. The squares or boards of college caps may be made of cork with hair and gossamer cemented on each side, so that they will not be liable to fracture, as the ordinary boards are. Heated pressing surfaces and blocks are employed to cause the adhesion of the fabrics to the gutta percha or india rubber and to finish the hat or other covering when made.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 6.—N° 2463.

CLARK, ALEXANDER MELVILLE.—(*A communication from Jacques Frédéric Paul.*)—"Improvements in "scissors."

I make scissors to fold up for carrying in the pocket, the blades being enclosed between the rings or bows. The bows, whether of circular or oval form, have spaces in which are inserted the ends of the blades and hinge jointed thereto in the manner of a folding corkscrew. The ends of the blades have projections entering grooves made in each side of the spaces in the bows so as to produce a spring action tending to hold the blades either open or closed.

Where the blades are made long I may apply springs to the bow joints of the blades for a like purpose. This improvement is also applicable in the preceding instance. A nail file may also be formed on the edge of one or both of the bows.

[Printed, 10*d.* Drawings.]

A.D. 1868, August 6.—N° 2464.

HANN, WILLIAM, and HANN, EDMUND MILLS.—"Improvements in safety lamps."

The improvements apply chiefly to the class of lamp known as the Stephenson lamp. The first improvements relate to preventing any current passing between the wire gauze cylinder and the glass chimney; the second improvements relate to the means of admitting air to the burner; and the third improvements relate to the caps or tops of safety lamps.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 6.—N° 2465.

LAKE, WILLIAM ROBERT.—(*A communication from Henry Hayward.*)—"Improvements in felted fabrics."

The said invention relates to imparting stiffness to felted fabrics by incorporating hair with the material forming the body thereof. I prefer to use horse-hair, which may be combined with the said material in single strands or may be loosely woven or knitted together.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 6.—N° 2466.

VTON, ALFRED VINCENT.—(*A communication from John Morrison Hunter.*)—" Improvements in the nufacture of boots and shoes."

e base or leading portion of the sole and heel is made of sheet metal stamped out with spurs or lips d its edge to establish its attachment to suitable border strips.

rinted, 10*d*. Drawing.]

A.D. 1868, August 6.—N° 2467.

ORE, WILLOUGHBY MONTGOMERY.—" Improvements in invoice and other paper holders."

aking invoice holders of two flat boards held together with the papers between by a pair of moveable s nipped together by india rubber rings at the ends. One of the two boards is made in two or more ts or leaves hinged together so that more or less of the invoice may be seen without removing the ne by merely folding down or opening the corresponding part of the hinged board, the laths being pped past the joint for that purpose. When at rest the laths are caused to pass diagonally across the nt or joints and to hold the entire surface of the jointed board flat against the documents.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 7.—N° 2468.

APLETON, THOMAS WESNEY.—(*A communication from Pierre Achille Gauthrin and Auguste Pierre yot.*)—(*Provisional protection only.*)—" Improvements in breech-loading fire-arms."

The hammer and all the working parts are contained within the body of the gun. The top of the nmer enters a notch in the striking bolt and drives it forward when released from the trigger. The gun ocked by a lever which forms the trigger guard.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 7.—N° 2469.

RTIS, CHARLES JOHN, and FIDDES, AUGUSTINE.—" Improvements in safes and strong rooms."

onsisting of bolts having dovetailed ends and a plate with spaces to receive the said dovetails when the s are shot, forming a solid centre; also a rebated or grooved door frame with door to correspond, eton frame all in one, with door frame filled in with rollers.

[Printed, 1*s*. Drawings.]

A.D. 1868, August 7.—N° 2470.

DDICK, GEORGE WILLIAM.— (*Provisional protection only.*) —" Improvements in combining forks nd spoons."

or this purpose the inventor applies to the stem of the fork or spoon a slide, to which is connected a on or fork, so that either can be used when required, the prongs of the fork being also employed as a le, and when it is required to change from the one to the other article it is only necessary to slide the upon the other.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 7.—N° 2471.

NT, BRISTOW.—(*A communication from John Haskins.*)—" Improvements in india-rubber fabrics."

his new manufacture or fabric is produced by taking sheets of india-rubber (of various thicknesses, rding to the uses to which they are to be applied) and piercing or perforating them all over with minute s or perforations, the size, number, and distance apart being also varied according to circumstances, but must be of sufficient size to allow of air and gases passing freely through, and to be plainly visible on ling the fabric up to the light, at the same time that they must be sufficiently minute to prevent the age of water, excepting when pressure is applied.

his water-proof (but not air-proof) fabric may be either used alone and independently of any cloth-base, s an outer covering for silk, cotton, woollen, or other cloth, or any material which will answer the pose for any article of apparel for men's or women's wear.

Printed, 6*d*. Drawing.]

A.D. 1868, August 7.—N° 2472.

ITEHEAD, JOHN.—" Improvements in dandy rollers used in the manufacture of paper."

he roller is composed of a length of strong wire to which a line of metallic rings is soldered or brazed, r lengths of wire being soldered on the rings, by which means the rollers are rendered much stronger lighter.

Printed, 10*d*. Drawing.]

A.D. 1868, August 7.—N° 2473.

SALAMON, Nahum.—(*A communication from Benjamin Porter Howe.*)—"Improvements in sewing "machines."

These improvements consist in a new method of giving pressure to the pressure foot, and in regulating the amount of pressure on the cloth.

Also in a new method of lifting the pressure foot off the cloth and turning the pressure foot at right angles off the work by the same means.

Also putting sewing machine frames together by locking the parts together, doing away with the use of bolts.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 7.—N° 2474.

BENJAMIN, Henry.—"A new or improved washing machine."

This invention consists of a revolving star shaped metallic vessel in which the clothes are washed by being brought in contact with the angles of the same charged with boiling water and the washing compounds.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 7.—N° 2475.

LITCHFIELD, Joseph.—(*Letters Patent void for want of Final Specification.*)—"Improvements in the "manufacture of lace fabrics and in apparatus employed therein."

The object of this invention is principally to produce readily and advantageously in twist lace machines broad lace fabrics such, for example, as curtains.

The fabric which it is desired to produce consists of ground-work or net with a pattern of fining or opaque work upon it and usually also with open work or holes larger than the meshes of the ground net.

The crossings of the net are each produced by two warp threads passing from pillar to pillar in opposite directions and so crossing each other, and the finings are produced by warp threads passing over three or more of the pillars. The open work or large holes are produced by omitting the crossings of the warp threads.

According to this invention such fabrics are produced by the use in the machine of jacks or moveable stops which enter amongst the warp threads and act upon them so as to regulate their motion and prevent them from moving, in all cases the same number of gates as the warp bars which carry them move.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 7.—N° 2476.

NEWTON, William Edward.—(*A communication from Marie Joseph Denis Farcot, Jean Joseph Leon Farcot, Michel Basile Abel Farcot, and Joseph Etienne Eloi Chateau.*)—"Improved apparatus or mechanism "for regulating the speed or power of machinery."

A regulating apparatus is placed between the mechanism to be actuated and the motive power engine so as to regulate the cut off of the steam.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, August 7.—N° 2477.

LEACH, George.—"Improvements in machinery for carding wool and other fibrous substances and in "the mode of and apparatus for forming bats or slivers."

This invention relates, 1st, to an improved fixing, or bearing, or standard for workers and strippers of carding engines; 2ndly, to an improved and novel method of taking up the fleece or sheet sliver as it comes off the doffer of the carding or scribbling engine so as to wrap or wind it in layers upon a rotating cylinder or drum.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, August 7.—N° 2478.

NEWTON, William Edward.—(*A communication from William Gardner.*)—"Improvements in fire- "arms."

A tubular magazine is placed under the barrel which is capable of longitudinal motion forward so that a cartridge may be lifted from the magazine into a line with the barrel.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 7.—Nº 2479.

OLD, John.—(*Provisional protection only.*)—" Improvements in the construction of steam boilers."

e invention consists principally in inserting a hemispherical dish-shaped conical or other similarly ed shallow auxiliary water space in the fire box between the top of the latter and the upper side of the tube (or of the upper cross tube if more than one is used), and in connecting this auxiliary water space e lower side of the cross tube by a short tube or ring and at the upper side with the water space above top of the fire box by means of two, four, or other convenient number of tubes rivetted, screwed, or rwise fixed to the upper side of the auxiliary water space and to the top of the fire box, so that there be a free circulation of water between the water space above the fire box, the auxiliary water space, the cross tube.

Printed, 4*d.* No Drawings.]

A.D. 1868, August 8.—Nº 2480.

RDNER, Sankey.—" A new or improved annealing pot and stand."

his invention consists in the construction and employment of annealing pots and stands of a corrugated n. In some cases the sides only are corrugated, but in other cases the top of the pot as well as the sides corrugated. The corrugations vary in size and number according to the dimensions of the pot and id.

he pots and stands are made in the ordinary way by running molten metal into sand moulds.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 8.—Nº 2481.

OADFOOT, John.—" Improvements in waterclosets."

n a modification for general purposes there is a main discharge valve of a spherical form with a cylin-al way through it, which is held in a spherically-shaped box made in two halves. The box may be le wholly of brass, but it is preferred to make it of cast-iron with annular brass lining pieces fitted in at top and bottom openings into the box. At these parts also there are inserted rings or narrow annular ps of hard leather, and it is against these that the spherical valve which is made by preference of gun al bears, so as to make tight joints when the valve is closed. In a modification for ships a valve closing ns of a spring is added below to prevent the ascent of water. The valve of the water supply pipe sists of a plug of glass or wood which closes against an annular seat covered or lined with a ring of ber or leather.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 8.—Nº 2482.

NT, Bristow.—(*A communication from Anais Vion.*)—(*Provisional protection only.*)—" Improvements n blind furniture."

he apparatus consists principally of a grooved pulley fixed on one end of the roller and having a hollow jecting centre or box in which is placed a spiral or coiled spring; the inner end of this coiled spring is ched to the centre of the pulley, and the outer end thereof is attached to the plate or bracket which ries the fixed pin or pivot on which the pulley is mounted and turns.

wo small grooved pulleys placed only a small distance apart are attached to the bracket below the er pulley, and serve to guide and facilitate the working of the endless cord.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 8.—Nº 2483.

RK, John, and BATSTONE, John.—" An improved shield for the purpose of protecting fortifications, essels, and other structures or buildings against projectiles or other missiles of war."

he improved shield is strongly constructed of metal, wrought or rolled iron being preferred, and is ided into a convenient number of cells or chambers, so constructed and arranged that they can be dily filled or charged with water which is forced into them under a sufficiently high pressure to permeate ough the metal, and by the employment and use of this shield permanently or temporarily affixed side fortifications, vessels, or other similar structures or buildings, increased resistance will be given to jectiles or other missiles of war.

[Printed, 10*d.* Drawing.]

A.D. 1868, August 8.—Nº 2484.

ANDEN, James.—(*Provisional protection only.*)—" Improvements in the construction of multitubular boilers."

The object of this invention is to counterbalance the pressure on the tube plates of multitubular boilers and thereby to prevent the loosening of the joints of the tubes therein by the expansion and contraction thereof which now takes place in vertical multitubular boilers as at present constructed. I propose to effect this by the following means, that is to say, I form the centre part of the top of the boiler (supposing it to be an upright boiler) with a head or dome of a cylindrical shape projecting through and above the other and surrounding part of the top of the boiler, which is flat and fixed to the sides thereof, whereas the aforesaid dome is not fixed to the flat top, but passes through a large hole or opening formed therein, and so formed as to receive packing which surrounds and encircles the dome and allows it to have free play through the fixed top as expansion and contraction goes on.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 8.—N° 2485.

NEWTON, Alfred Vincent.—(*A communication from Edwin Louis Bomeisler.*)—(*Provisional protection only.*)—" An improved construction of steam engine governor."

The apparatus consists of a receiver fitted with a movable cover or elastic diaphragm to which is connected a crutch that is jointed to a throttle valve lever. The receiver is also provided with an outlet having an adjustable valve applied to it for regulating the escape of fluid that is forced into the receiver by a supply pump worked by the engine that is to be regulated. The supply pump is double action, and its object is to supply fluid (through branch pipes fitted with floating valves) to the reservoir in such quantity as to keep the cover or diaphragm and thereby the throttle valve of the engine at a position for controlling the speed of the engine, a regulated escape for the fluid from the receiver being at the same time kept open.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 8.—N° 2486.

NEWTON, William Edward. — (*A communication from Peter Nelson Jacobus.*) — " Improvements in " screws and screwdrivers."

The screw driver is made with jaws to clamp the head of the screw, which has notches made in it for the jaws to catch into.

[Printed, 6*d*. Drawing.]

A.D. 1868, August 8.—N° 2487.

NICKOLS, Daniel.—(*Provisional protection only.*)—" Improvements in cocks or taps."

This invention consists in arranging and combining with the ordinary cone plug, cock, or tap, mechanism by which it can only be slowly rotated to adapt it for liquids under pressure. The mechanism used may be a worm and worm wheel or wheels and pinions or screws and screw inclines.

[Printed, 4*d* No Drawings.]

A.D. 1868, August 8.—N° 2488.

DŬBS, Henry.—" A steam crane and locomotive engine combined."

This invention consists essentially of a combined locomotive and steam jib crane all arranged to be controlled by one man at the fire box end for the general purposes of a pilot engine, and the lifting, removing, and lowering of heavy bodies on or near its lines of rails at goods depots and public works where such is required, all more conveniently and economically than such has been done by machinery as heretofore constructed. The locomotive is by preference of the small tank class, carrying the boiler and main frame, on four springs above the frame, made wide, with the tanks set along the side platforms on the top of the frame, made level with the foot plate all round, covering and enclosing the wheels, outside cylinders, and machinery by strong side plates turned up at their lower edge, which, together with the platform, is made so as to carry many moderately heavy articles lifted on to them by the crane (besides those removed hanging on the crane itself), and also protect heavy articles from striking the machinery when lifting them at the side, and all arranged with the weight set as low and wide as possible, balanced and carried on four wheels placed at equal distances from and round the centre of gravity, over which upon the crown of the boiler the main frame of the crane, formed of two plates or cheeks forming the jib carrying the chain barrel, chain, and pulley on the one side, and carrying on the other side the actuating engines, shafts, and gearing, all set with their weight and leverage to counterbalance the weight of the jib and " lift " to a considerable extent, and so as to swivel on a strong, vertical, hollow, malleable iron pillar, forming a close steam receiver or chamber, firmly secured over the centre of the locomotive boiler to an extra strong cylindrical plate at this part of the boiler, which receives and transmits the strain of the crane to the main frame, to which it is firmly secured by strong bearing flanges and angle iron round the under side, all so as to prevent the general shell of the boiler being ed. The crane is supported and turned on a strong swivel centre and stuffing box head, jointed steam on the top flange of the pillar by side and edge steadying and bearing anti-friction rollers mounted in per binding and carrying cross frame, which carries on its top a short steam pipe and stop valve and attached for conducting the steam to the casing, and also the lever for working the two reversing alve motions of the engines for working the crane, all so as to turn round with them and the while the lower end of the steam pipe works down through the stuffing box formed in the top axis of the g head or centre of the stationary hollow pillar. The steam valve and the lever for working the otions for lifting and lowering are actuated by two long light shafts (one on each side of the main pipe and stop valve and actuating spindle, all convenient for the same man to work locomotive ane) working out through screw stuffing boxes near the crown of the fire box end of the boiler, and wheels for turning them; the inner ends of these shafts being carried in bearing brackets secured saddle frame or bracket across the lower open end of the pillar of the crane inside the boiler so the inner end of the steam screw spindle by a duplex or bell crank lever arrangement raises and rs two long links or connecting rods attached by eyes to short lateral arms on the hollow boss ched loosely by collars through the eye of the steam valve, so as to open and shut it while it yet ns round with its steam pipe and valve face, the long links working on each side of a central spindle rking in the true axis of the pillar, up through said hollow boss and eye of the valve and a small ffing box in the upper end of the steam pipe which turns with the crane (while the links and rod prevented from turning by a slotted guide near their upper part) so as to raise and lower the forked d of the bell crank lever for reversing the link motions of the crane engines, and thus cause them to t and lower by a double crank shaft (with cranks set at right angles to each other) which through an ermediate shaft and double set of spur wheels and pinions all carried in bearings in the side frames, uates a chain barrel on the jib side of the crane, the chain barrel by preference being of the screw oved kind for receiving and guiding the chain, the hook end of which is carried over the hoist pulley extreme end of jib, all much as in other cranes. The lower part of the crane swivels on horizontal i-friction rollers set round a large eye in the lower supporting cross frame between the main side eks of the crane, by preference formed of two large plates of malleable iron cut to the desired jib ne shape and bolted together by the heavy cast iron frame carrying the cylinders and counterbalancing jib and "lift," and other cross stays in the jib in addition to the main swivelling frames already ned; the said rollers of the lower guide revolve by preference on a strong ring or hoop secured on lower part of the pillar of the crane. When desired a spur bevel or screw ring wheel may be secured the lower cross guide frame so as to swivel the crane by the attendant through a fixed shaft on top boiler and hand wheel on the end for actuating it near the other hand gearing before described or erwise the ring wheel might be fixed stationary on the lower flange of the pillar or to the crown of the ler, and the crane swivelled automatically by its own engines and disengaging gearing carried round on crane, such as are used in ordinary steam cranes for the like purpose.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, August 8.—N° 2489.

LTON, Frederick.—" Improvements in the treatment of resins or resinous gums and in the application of the products obtained therefrom."

This Provisional Specification describes fusing or melting gum Kourie or New Zealand gum with castor and applying the product to fabrics for waterproofing and other purposes or moulding it in dies for orna-ntal and other useful purposes, or as a coating for insulating telegraphic wires; it may also be used as a rine glue or for cementing emery to grinding wheels and other purposes, and dissolved in naptha, or other vent may be used for the manufacture of varnishes or paints.

For many purposes oxidized linseed or other oxidised oil may be mixed with the above compound.

In some cases other gums are substituted for gum Kourie.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 8.—N° 2490.

RD, James. — (*Provisional protection only.*) — " Improvements in the means of and apparatus for btaining and applying motive power."

According to this invention a prime mover is used, consisting of a steam engine or other power, and the ft of the fly wheel carries a driving pulley from which a band is passed to another pulley on a shaft ich carries a second fly wheel of a larger diameter and weight than the first, and so on to a third series or re; by which means an increasing momentum is obtained and a consequent increase of impetus or power, which may be applied to driving machinery of various descriptions by suitable gearing. Toothed wheels may be applied to the shafts instead of driving bands, the object being the same.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 10.—N° 2491.

KENYON, Thomas.—(*Provisional protection refused.*)—" Improvements in the manufacture of sulphuric " acid."

The nitrous and sulphurous gases are forced through a solution of weak sulphuric acid, and are then met by a spray of weak sulphuric acid combined with air and high pressure steam.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 10.—N° 2492.

LE ROY, Ferdinand.—"An improved non-conducting composition for preventing the radiation or " transmission of heat or cold and an improved method of applying the same."

The improved non-conducting composition is prepared by mixing and combining brick clay with powdered charcoal, sawdust, fuel sweepings, cow hair, cocoa nut fibre, wheaten flour, yeast or other fermentable substance, residues from the conversion of starch into sugar, water, and cotton foot oil, the composition is then submitted to a certain heat so as to cause fermentation.

In some cases hoop iron is employed in combination with the improved composition.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 10.—N° 2493.

CORFIELD, Thomas.—(*A communication from Joseph Rapson.*)—(*Provisional protection only.*)—"Im-" provements in the manufacture of paper bags and in the means of closing or fastening the same."

The fastening of a thin slip of tin to the mouth of an ordinary paper bag with the ends extending on either side, so that when the mouth of the bag is folded over it may be secured by bending back the ends of the slip of tin.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 10.—N° 2494.

HUNT, Bristow.—(*A communication from James M. Osgood.*)—(*Provisional protection only.*)—"An " improved machine for making eyelets."

The object of this invention is to produce eyelets of cast metal or composition, and to finish them by machinery without any intermediate manipulation, by which they can be manufactured very cheaply and with great rapidity.

The invention consists in the employment of a series of annular recesses formed on the surface of a rotating cylinder, in which recesses are fitted sliding tubes that surround fixed cylindrical pins, thus forming circular spaces for the reception of molten metal properly conducted to the same. A reciprocating logitudinal motion is given to the said sliding tubes by means of cross bars, to which they are attached, the ends of the said cross bars fitting in cam grooves formed on the inner sides of the cylinder heads.

In connection with the above is a second cylinder of suitable size studded on its surface with projections, buttons, or headers, which correspond with the recesses in the first named cylinder, and as the cylinders revolve are made to come in contact with the projecting ends of the partly formed eyelet and finish the heads or projecting edges of the same.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 10.—N° 2495.

HELLWAG, Bernhard.—(*Provisional protection only.*)—"A new or improved system or mode of " telegraphing on board of steam ships, and in the means or apparatus employed therefor, also applicable " for other vessels and purposes."

This said invention has reference to and consists mainly in a new or improved telegraph for use on board of steam ships and other vessels for giving tangible and audible signals for most of the prompt and important commands or orders by an arrangement for actuating an index or bell, or both at the same time, or a gong instead of the bell, worked in the steering house, or within sight and hearing of the steersman, and another in the engine room, placed within sight of the engineer, when "handing" the engines, and within hearing in any part of or near to the engine room, each arrangement worked by a duplex set of cylinders and pistons and connections or gearing, from and by a corresponding arrangement, placed on the bridge or other convenient station, near where the commanding officer prefers to attend to the ship or give his orders, and where he can either work the apparatus himself or see it done by the action of a simple hand

l or lever for each. The corresponding small cylinders on each side, "starboard" or "port," of each
t the opposite ends or stations are directly connected between the backs of their pistons by close tubes
l with fluids, as little compressable or elastic as possible, wherefor liquids are preferred which would not
lify or expand and contract much by the usual heat or cold of the atmosphere where the apparatus is to
sed, or by the slight pressure required to work it. The piston rods of the two cylinders at each end of
line of telegraph are made in the form of two toothed racks, so as to work into and on each side of
ck wheel placed between them, the spindle of which, with the index on it, or a disc with pins for
ating the bell or gong, is actuated as before stated, on the bridge or by the rudder post, as the case may
so as to push the one piston in and draw the other out of their respective cylinders by the direct mecha-
l connection of their toothed racks, and by the displacement and motion of the liquid in the cylinders
tubes, to push out and draw in the pistons of the cylinders at the other end or station, and by their
s turn the rack wheel and index on its spindle to the same extent as the one which was actuated
ositively" at the other end, and thus, by the similarity of the dials, and their index arrangements of
s, names, and sounds produced for every equal distance or angle of motion at the two stations, transmit
prompt and positive order desired. The invention further consists in the construction and use of very
ilar arrangements of telegraphs for giving return or "tell-tale" messages that the orders have been
cuted, or automatically showing at the bridge station the position of the rudder, and also the speed and
ction the engines are moving in, by the direct connection of the gearing of the index and pistons of
r particular set of cylinders, to the rudder post and engine shaft respectively; that, from the engine
t having the cylinders on each side acting direct and separate, with the pistons at the shaft moved by a
h or stud every revolution respectively, according to the direction the engines may be turning, "ahead"
astern," and so that every concussion of the fluid in the respective cylinders and tubes will raise small
ing or loose pistons in cylinders at the bridge, and thus show the officer there how many revolutions
engines are making in either direction, backwards or forwards.

Printed, 6*d*. No Drawings.]

A.D. 1868, August 10.—N° 2496.

GHES, Walter Watson.—(*Letters Patent void for want of Final Specification.*)—"Improvements in
ns or apparatus for forcing or drawing air."

his Provisional Specification describes a turbine with two discs, one close the other open in the centre,
a fixed ring round the opening, so that it can revolve air tight in an opening in the front end of the
ng. The spindle is fixed in the centre of the solid disc, and passes through the opening in the other
of the turbine to an upright, on which one end of the spindle turns; the other end revolves in a cross
ing fixed inside the casing.

here is an air space at the back of the fan and within the casing, and the pipe or pipes for conveying
y the air are connected therewith.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 10.—N° 2497.

WTON, Alfred Vincent.—(*A communication from Edwin Louis Bomeisler.*)—"Improvements in
utomatic indicators for steam boilers."

his invention relates to the employment of weights suspended in a cylinder for the purpose of giving an
m in case of high or low water or over pressure of steam, and also to the use of a hollow cap as a receptacle
the safety valve.

[Printed, 6*d*. Drawing.]

A.D. 1868, August 10.—N° 2498.

UWIRTH, Daniel, and HAWKINS, Abdiel.—"An improved process for producing raised printing
urfaces."

raised surface suitable for letter-press printing is produced by adapting glyphography to a photographic
ture obtained in intaglio by the use of a gelatinous film rendered sensitive to light by the addition of any
hromate.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 11.—N° 2499.

OBINSON, Robert.—(*Provisional protection only.*)—"Improved apparatus for regulating, controlling,
and for varying the speed of shafts and machinery."

The novelty of this invention consists, *first*, in obtaining a great variety of speeds from any given size of expanding pullies by contracting the one and expanding the other, during which changes a more even tension is kept on the band than by any other known method.

Secondly, by these means I dispense with the old method of using the third pully and slide for taking up the slack in the band while the one pully as formerly used was contracting.

Thirdly, by these means I can vary the relative position of the expanding pullies by one and the same operation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 11.—N° 2500.

HUNT, William Henry.—(*Provisional protection only.*)—" Improvements in that class of market baskets " known as Southport baskets."

This relates to Southport baskets, and consists,—

1st, in carrying the arched hoop which forms the handle down outside the mouth frame instead of inside as hitherto.

2nd, in making the covers of two longitudinal pieces and hinging or jointing one of them to each of the sides to which the ends of the arched hoop are connected.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 11.—N° 2501.

BROWN, Jeremiah.—" Improvements in rolling iron and steel, and in machinery connected therewith."

One part of this invention consists in blooming and slabbing iron and steel by passing the bloom or slab through two series of rolls, one in advance of the other, the rotation of one series being in a direction opposite to that of the adjacent series.

Another part consists in dispensing with the turning over of the bar and making the same rolling machinery suitable both for blooming and for rolling plates, bars, and other forms, the ends of the roll being for blooming and the body for preparing the iron or steel to be rolled into bars, plates, or other forms.

Another part consists in mounting finishing rolls on a base or platform working on a tramway or slide and gearing them at the proper times with the preparing rolls.

Another part consists of a lifter or table for raising or lowering the slab or bar being rolled from one groove to another groove of a series of rolls.

Another part consists in placing different series of rolls on different levels, the bar passing from the highest down an incline to the next, and so on.

Another part consists in reversing the motion of the rolls by driving the gearing from the top centre instead of the bottom centre, as usual.

Another part consists in conveying the bar from the rolls to the shears or saw by means of a series of rollers having rotatory motion given to them.

[Printed, 2*s*. 8*d*. Drawings.]

A.D. 1868, August 11.—N° 2502.

CLARK, Alexander Melville.—(*A communication from Alexandre Hédiard.*)—" Improvements in " propelling vessels, and in apparatus for the same, also applicable for other purposes."

For the purpose of propelling vessels I inject steam from a boiler into an apparatus composed of several cones disposed one within the other to which the water has free access and placed at the bottom of the vessel. The steam is projected from the centre of the cones, carrying with it a column of water which reacts on the surrounding water and so propels the vessel.

According to another arrangement I project the steam from a number of cones forming annular chambers independently of the central steam jet.

This invention is also applicable to all kinds of blowing apparatus, and for creating a vacuum in the tubes of pneumatic railways, or in tubes for the transport of letters and parcels, as also for raising water. Air may also be used instead of water as a propelling agent.

[Printed, 10*d*. Drawings.]

A.D. 1868, August 11.—N° 2503.

SALMON, James.—" Improvements in printing machinery."

This invention is chiefly applicable to printing cards and envelopes. The cards are placed over the "form," printed, delivered from the machine, and the form inked and the inking roller fed with ink, self-acting.

'feeders" move to and fro under a pile of cards, delivering a single card at each stroke. The card :d by pressing the form against the platen or the platen against the form. It is then pushed off the ;, falling down a shoot of inclined planes which turn the card over, printed side uppermost. The form by a roller or rollers passing over it and taking up a fresh supply of ink at each stroke from a disc urns round, presenting a fresh surface for the rollers at each stroke. The roller may pass over and ıe platen, the disc being set face downwards above the platen or on the top of the platen face upwards, y pass over and under the form; or to and fro with the platen, to which a sliding motion may be or to and fro with the feeders. It may also have an independent to and fro movement over the king fresh ink from the disc which moves vertically at one side or end of the machine.

ted, 1s. 8d. Drawings.]

A.D. 1868, August 11.—N° 2504.

E, HENRY, MOORE, THOMAS, and MOORE, GEORGE.—(*Provisional protection only.*)—" Im- ments in the manufacture of window and other cornices, poles, and rods for internal or house ations.".

ıovelty of this invention consists in the use of earthenware or porcelain in length, tubes, or otherwise ices, poles, rods, or other internal decorations, and also in strengthening the same by internal wood supports when so required.

ted, 4d. No Drawings.]

A.D. 1868, August 11.—N° 2505.

MATTHEW, and HAWKINS, FREDERICK.—" Improvements in the mode of and apparatus used nufacturing telegraphic insulated wires and cables."

ering the wires we use pressing rollers with several ring grooves placed side by side, and the pro- which separate the grooves we form with blunt edges or compressing rings.

nbining the covered strands or wires into one cable we facilitate the drawing out of the several wires e cable to connect them with the electrical instruments to and from which they are intended to currents of electricity by powdering the wires with French chalk or flour, and we then vulcanize.

ed, 10d. Drawing.]

A.D. 1868, August 11.—N° 2506.

ON, JOHN HENRY. — (*A communication from Jean Baptiste Antoine Maurize.*) —" Improvements permanent way of railways."

rting certain peculiar forms of rails of permanent way upon longitudinal arched beams resting end on the chairs. The rails are provided with a safety flange for preventing the carriages off the line. The sleepers are cruciform and made in two parts jointed together, and support r in the middle. On the wheel bearing surface of the rail there is laid a removable sheath or steel or other suitable metal having a layer of good sound deadening material immediately under ı sheath when worn is removed and replaced by another without discarding the rail itself. In es compound rails suitable for light traffic are used composed of wood faced with iron or steel plates, ided with the safety flange as above described. These improvements are also applied to the ordinary rails at present in use.

ed, 1s. 4d. Drawings.]

A.D. 1868, August 11.—N° 2507.

AKOFF, ALEXANDER.—(*Partly a communication from Basile Bauler.*)—" Improvements in the tion by means of photography of printing surfaces adapted to lithography, typography, and otype."

vention is based on the property of gelatine that when suitably prepared and exposed to the action those parts acted on by light will not swell when moisture is applied to them and will not melt rm liquid substances are applied to them.

pecification describes a process for preparing printing surfaces for litho and typography, also the m of the process in chromotype printing, and also a mode of printing by means of gelatinous inks es so prepared from nature.

d, 6d. No Drawings.]

A.D. 1868, August 11.—N° 2508.

ANE, JOHN.—" Improvements in rollers for paper-making machines."

ıvention consists in constructing the upper and under couch rollers and under press rollers with an iron shell covered with india rubber. By this means are secured acting surfaces possessed of the requisite capability to bear pressure, and at the same time elastic in a sufficient degree for the purpose.

[Printed, 6*d*. Drawing.]

A.D. 1868, August 11.—N° 2509.

CROSKEY, Joseph Rodney.—(*Provisional protection only*.)—" Improvements in looms for weaving."

This invention relates to certain improvements in looms, chiefly wherein the shuttle is driven across the race by pneumatic force.

A pump or collapsible air vessel is applied to each end of the sley beam at the side or underneath, and an air passage is formed from the air vessel within the beam into the shuttle box; the air vessel is contracted or collapsed and drawn out by means of attachments directly actuated by a stud or projection on the second motion wheel of the loom or other convenient wheel; and this stud or projection regulates the discharge of the shuttle at the proper time, when the receding beam approaches the stud, and also liberates the shuttle by a pall or by a valve.

The shuttle may also be driven by means of a vacuum and the inlet of air.

The beam is slackened or tightened by the motion of the sword arm, and an extra roller is applied under the breast beam.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 12.—N° 2510.

HEADLY, Edward Paget Gillam.—"An improved hydraulic apparatus for watering streets, roads, " gardens, and other places, extinguishing fires, attaching to fire engines, and other similar or analogous " purposes."

The novelty in this case consists of a drum mounted upon a locomotive frame and with a hollow axis carrying a coil of flexible pipe, one end of the pipe being connected with the hollow axis, and the other free for attaching it to hydrants or street or other stand pipes charged with water under pressure. The water flows through the coil and is distributed by the hollow axis as the apparatus travels, no barrel or other water-container being necessary.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 12.—N° 2511.

HILL, David, RICHARDSON, Joseph, DUCK, George Nixon, JOHNSON, Cuthbert Greenwood, and MASTERMAN, William Fairles.—" Improvements in the manufacture of iron " and steel."

This invention consists in the use of certain artificial compositions in the manufacture of iron and steel. These compositions may be divided into three classes,—

Class 1 is formed by taking any natural iron ores, or iron stones, or artificially obtained ferruginous bodies, comparatively free from phosphorus and sulphur, and their oxides and compounds, and melting the same either singly or in combination in any convenient furnace, vessel, or apparatus into a mass wholly or partially homogeneous.

Class 2 is prepared by taking one or more of the substances previously mentioned and melting the same either singly or in combination together with scrap iron (with or without siliceous matter) into a wholly or partially homogeneous mass.

Class 3 is formed as follows:—Either of the before mentioned compounds is taken, and any of the heavy metals, or any metallic alloy, amalgam, oxide, salt, or haloid body, or minerals, or artificial compounds, or organic matters containing or capable of producing such bodies or one or more of them, is or are charged therewith into any suitable furnace, vessel, or apparatus, and melted together into a mass more or less homogeneous, or the before mentioned substances may be charged into the furnace, vessel, or apparatus together with the natural iron ores, ironstones, or artificially obtained ferruginous bodies, or one or more of them, and with or without the addition of scrap iron, and the whole melted together into a mass more or less homogeneous.

These compounds are respectively applied to the purposes of this invention by charging the same with pig iron in the refinery, or with refined plate or pig iron in the puddling furnace, or may be used as " fettling" for the puddling furnace, or in any furnace, vessel, or apparatus in which the manufacture of iron or steel is conducted, such use purifying and greatly improving the quality of the metal produced.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 12.—N° 2512.

NSBORROW, John.—"Improvements in apparatus for measuring water and other liquids, which mprovements are also applicable in obtaining motive power."

he object of the improvements is to obtain a positive motion either for the measurement of positive ntities or as a motive power engine. For this purpose the liquid is directed through valves to the osite ends of cylinders in succession, such cylinders being placed by preference perpendicularly and ning at their opposite ends into separate chambers. The liquid flows into the valve chamber and ace alternately by the opposite ports of the respective valves by suitable passages to the respective mber, and back by the other or central ports. The piston rods act on a shaft to give motion to the es and to the index gear, or as a motive power.

Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, August 12.—N° 2513.

NDLEBURY, John Tomlinson, and **PENDLEBURY**, Thomas.—(*Provisional protection only.*)— n improved valve motion applicable to direct-action steam pumps and similar purposes."

he valve spindle is actuated partially by mechanism worked by the piston and partially by springs.

pon the sides of the valve spindle are formed inclined planes upon which the springs act.

he effect of these inclined planes and springs is that the spindle must move in either one or other ction to the end of the stroke and cannot stop at any intermediate position.

lever worked by an arm on the piston rod imparts motion to the valve spindle until it is moved iciently far for the spring to act upon it.

Printed, 4*d.* No Drawings.]

A.D. 1868, August 12.—N° 2514.

OMPSON, James.—(*Provisional protection only.*)—"Improvements in reducing and utilizing certain escriptions of scrap homogeneous iron or steel."

he novelty of this invention consists in the entire use of rolls for the more economic reduction of scrap umps of homogeneous metal, or old worn out rails, or other like bars of homogeneous metal, whereby processes conduce to the general improved condition of such metal.

Printed, 4*d.* No Drawings.]

A.D. 1868, August 12.—N° 2515.

OAD, Joseph.—(*Provisional protection only.*)—"Improvements in machinery, apparatus, and process the treatment of carboniferous plants and other fibrous material for the manufacture of paper, cardoard, and other similar articles."

he machinery consists of two cylinders to admit of steam to the internal part, with steel pins pointed vith a cutting edge fixed on the external part thereof. When the cylinders are put in motion they are sed to rotate horizontally while the fibrous material is held in a vertical position, and being operated on he same time a perfect fibre is thereby obtained.

he apparatus for softening and converting the fibrous material is by the use of a wrought iron vessel le square or sphereical ended. The material is acted on by jets of steam when deposited in this vessel the tinued agitation of the steam reduces it to a pulp.

he process of purifying is by the use of chemicals in conjunction with steam being admitted to the ous material or pulp when in an air tight vessel; thereby bleaching and purifying the fibrous material ulp under pressure of steam.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 12.—N° 2516.

NSON, Henry Henson.—"Improvements in metallic ropes."

his invention consists in protecting wire ropes by covering each wire with a coating of a fibrous material h or without bituminous or other waterproofing substances or by imbedding the wires in such fibrous bituminous materials laid between them while the rope is being made.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 12.—N° 2517.

TZ, Carl Dietrich Julius.—(*Letters Patent void for want of Final Specification.*)—"Improvements the construction of furnaces for the recovery of the soda from the waste lyes resulting from the boiling

" of esparto grass or straw, in the working and incinerating of the residue resulting from evaporation, and " in an improved means of depriving it of any offensive odour."

By this invention the obnoxious smell usually arising is obviated. It consists in constructing furnaces so that the residuum having arrived at a pasty state and taken fire without leaving the furnaces, is transferred into an additional bed of another furnace communicating with the first either back to back, or back to side, by an opening opened or closed by a damper. To thoroughly dry the residuum and entirely free it from smell a small quantity of quicklime is mixed with the lyes which makes the residuum open and porous, thus allowing sufficient air to come in contact with all parts of it, and burn off the gummy resinous matter. The mass is worked and turned, fusion being avoided, until dry and at a dull red heat throughout. When brought to this state it may be withdrawn and will burn itself white or nearly so and is entirely free from smell.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 12.—N° 2518.

WILSON, JAMES.—" Improvements in outside blinds or sunshades for windows."

One end of the cloth forming the blind is attached to a roller carried in bearings, the other end thereof being fastened to a board or frame.

A series of expanding and contracting arms pivotted together have one end of each series jointed to the board or frame while the other ends work on a pivot.

When the outer board or frame is pulled outwards it expands the arms and extends the cloth, but when pushed inwards the arms contract and the cloth is wound on its roller by means of a box spring.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 12.—N° 2519.

SOUTHALL, RICHARD HODGSON, and HALLAM, WILLIAM. — " A new or improved method of and " apparatus for protecting the side springs or elastics of boots and shoes."

This invention consists in applying to the side springs or elastics of boots and shoes of a guard or guards made of leather, silk, woollen, linen, cotton, or other textile fabric or fibrous material. Each guard is preferably made in two parts, held together by elastic rubber or other webbing.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 12.—N° 2520.

DEWHURST, HENRY, DEWHURST, JOHN WILLIAM, and DEWHURST, ROBERT ELLIS.—" An " improved process of ornamenting seal skin cloths."

In carrying out this invention we take a plain copper or other cylinder or roller and engrave the surface in such a manner as to produce either uniform tipping or coloring or tipping or coloring in the desired pattern or design, and having mounted this roller (so engraved) in a cylinder printing machine we apply paint to the surface of the said roller (instead of the colors ordinarily employed for cylinder printing) in the same manner and by the same means as the color is usually furnished to printing rollers, such paint being transferred by the cylinder to the seal skin cloth as it passes through the machine in contact therewith.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 12.—N° 2521.

LUNN, HENRY.—(*Provisional protection only.*)—" Improvements in postal sample bags or envelopes."

This invention relates to an improved mode of closing or fastening sample bags or envelopes intended for the reception of samples to be transmitted by post, whereby security is afforded to the contents of the said bag or envelope, whilst at the same time the fastening is of such construction as to admit of its being readily opened for postal inspection and securely closed again. According to this invention the bag is closed along three sides, and is provided with a closing flap on the fourth side, which flap has a tongue formed thereon or secured thereto, having an enlarged extremity. A slip of cardboard or other stout material is let into or secured upon the body of the bag or envelope, and the expanded end of the tongue is passed through or under it, the expanded portion of the tongue having been first folded down at the sides so as to enable it to pass through or under the slip and then open out again so as to effectually retain the tongue in its place and keep the flap closed. The bag or envelope may be made of paper strengthened, if desired, by the aid of textile fabric or extra thicknesses of paper, parchment, or other suitable material cemented thereon at the parts most liable to tear, or it may be wholly made of parchment, linen, or other suitable stout material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 12.—Nº 2522.

EAVER, Joseph.—(*Provisional protection only.*)—“ Improvements in ornamenting bobbin net lace and ther fabrics.”

ccording to this Provisional Specification the fabric is dressed with adhesive material and small pieces metal, ribbon, foil, or leaf, or it may be of colored paper or material, cut to definite and regular forms, sprinkled over it and become attached by the adhesive dressing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 12.—Nº 2523.

PIER, Richard Christopher.—(*Provisional protection only.*)—“ Improvements in electric clocks and apparatus connected therewith.”

his Provisional Specification describes an improvement in Bright's electric break by which greater inty of contact is insured.

so the use of two or more breaks for making simultaneous contact.

so placing magnets in only one half of the length of the magnet bar.

so methods of hanging and regulating the swing of pendulums of electric clocks.

so an apparatus for turning gas on and off sooner or later according to the length of the day.

so a method of working groups of clocks.

so a method of mounting the break.

so a method of working clocks at different stations.

so a method for making electric clocks strike.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 12.—Nº 2524.

LKER, Henry Burton.—(*Provisional protection only.*)—“ Improvements in extracting burs from ol.”

is Provisional Specification describes steeping wool in diluted sulphuric acid; then passing it through rs; then allowing the air to act upon it, and subsequently drying it by heat. Afterwards the wool is lyed” to knock out the burs, and is then steeped in a soda bath and passed through rollers and washed ap and water and dried.

rinted, 4*d*. No Drawings.]

A.D. 1868, August 12.—Nº 2525.

NE, William.—“ Improvements in steam cocks or valves also applicable for hot or cold water.”

cording to this invention a combined cock and valve are formed by placing a conical valve in a seat n the chamber with a stem extending to the plug which is cut with two segments so that when the is turned the valve rises and falls accordingly.

rinted, 8*d*. Drawing.]

A.D. 1868, August 12.—Nº 2526.

HHOLZ, Gustav Adolph.—“ Improved machinery for hulling grain.”

e hulling machine consists of a cylindrical case fitted at its opposite sides with pannels of wire gauze erced metal to facilitate ventilation within and armed on its inner periphery at the parts not occupied e pannels with sets of steel blades fixed radially in segmental groups. Within the cylindrical case is ated a series of drums (say four, the number preferred for ordinary working), which are keyed upon a al rotating shaft. These drums are armed on their peripheries with blades made like those on the case e flat steel plates. The drums are cast with radial wings extending from the boss to the periphery and pposite sides of the disc, which serves as arms to the drum.

rinted 10*d*. Drawing.]

A.D. 1868, August 12.—Nº 2527.

RIE, John, junior.—(*Provisional protection only.*)—“ Improvements in machinery or apparatus for shing wool and other fibrous materials.”

is invention refers, firstly, to swing rakes, and consists in applying thereto a balance weight; secondly ains for travelling surfaces, the peculiarity being that rivets for the joints are not used.

rinted, 4*d*. No Drawings.]

A.D. 1868, August 12.—N° 2528.

NEWTON, William Edward.—(*A communication from Garrett Peter Bergen and Charles Thomas Bainbridge.*)—" Improvements in photographic frames and mechanism for making same."

The cards or frames are punched out of a long length of cardboard wound on a roller, from which it is drawn off automatically and brought under a punch to cut out the opening and embossing tool to ornament the margin, and a shears to cut off the card or frame from the long length. These three operations are performed simultaneously.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 12.—N° 2529.

SIM, Robert.—" Improvements in compositions for preventing the fouling of ships' bottoms and other " buildings exposed to the action of sea or impure water."

This Provisional Specification describes a composition containing compounds or mixtures of iodine and mercury, or a mixture of these with other iodine compounds. It also describes preparatory compositions and modes of applying the same.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 13.—N° 2530.

BARNETT, Frederic.—" An improved apparatus for swimming."

The merit and novelty of my invention consists in the application of artificial fins to the human body while in the water, by which means the swimmer obtains with comparative ease an increased sustaining and propelling power with infinitely less fatigue and peril, also with less risk of cramps.

[Printed, 10*d.* Drawing.]

A.D. 1868, August 13.—N° 2531.

THOROLD, William.—(*Provisional protection only.*)—" A new or improved system of railways and " rolling stock therefor, and the arrangement of electric telegraph line wires in connection therewith."

This invention consists in constructing railways with one single line of rail only placed in the middle underneath the carriages, which are provided with one line of bearing wheels situated in the middle beneath them, the vertical position of the carriages being insured by side wheels running on the common road or ballast, but which bear little or no weight of the carriage.

The carriages are propelled either by traction engines having driving wheels running on the common road or ballast and central guiding wheels running on the rail and carried in a bogie frame. Or the train may be propelled by beasts of burden.

A bridge rail fixed on a longitudinal sleeper is by preference used for the line of rail, and in the space inside the rail are placed electric telegraph wires.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 13.—N° 2532.

SAUNDERS, Robert.—" Improvements in anchors and appliances to the same, also applicable to other " tackling liable to sudden strains."

This invention consists of improvements in anchors and means for rendering them and cables, as well as other tackling, more efficient, whether used for vessels or in connection with ropes or chains on shore, the object being to absorb and to mitigate the effects of jerks and sudden strains to which any such tackling may be subjected when in use.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 13.—N° 2533.

GRANT, John.—" Improvements in machinery for turning over the leaves of music books or pieces of " music, applicable to music stands, pianofortes, organs, and some other kinds of musical instruments."

This invention consists in turning over the leaves of music books or pieces of music by means of the direct action of a screw with a very deep thread, in the spaces between the turns of which the leaves to be turned over are first introduced.

[Printed, 1*s.* Drawing.]

A.D. 1868, August 13.—N° 2534.

MILLBANK, Isaac Morris.—" Improvements in breech-loading fire-arms and cartridges.",

A sliding spring hammer behind the barrel fitted removably, a sear with a hooked end taking the hammer, and a trigger with a locking block acted upon when the stock is grasped form the primary novel features of invention, and these are combined with a firing punch and a sliding or swinging breech. The punch he swinging breech is acted upon by a lever and gear teeth. In the sliding breech the firing pin passes ugh a transverse bolt acted upon by a lever and sustaining the recoil. The sliding breech block is e in two parts secured together. At the rear end of the stock is a metal plate outside an india rubber ion. The cartridge is a metal flanged shell with an interior cup shaped base containing the fulminate cavity, and the ball has around it a wrapping of wood or paper to keep the barrel from injury or ng. A swinging claw at the front end of the breech block draws out the cartridge shell as the breech pened.

Printed, 1*s*. Drawings.]

A.D. 1868, August 13.—N° 2535.

HAM, BENJAMIN.—(*Provisional protection only.*)—" Improved means of dyeing warps of worsted, tton, silk, or other fibrous substances."

he novelty of this invention consists in the adaptation and use of the "jigger" for dyeing warps by ng and flanging the rollers employed for winding on and off the warps.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 13.—N° 2536.

FFANSON, HÅKAN, and HADLEY, JONAH.—" Improved machinery for decorticating grain."

he improved machine consists of a rotating cylinder in which a series of roughened arms or blades nted on a central spindle are caused to rotate, the grain to be operated upon being let into the cylinder ne side near the centre or at the top, and discharged therefrom at the other side or at the bottom.

Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, August 13.—N° 2537.

LDING, JOSEPH. — (*Provisional protection only.*) — "Improvements in the 'healds' or 'harness' nployed in looms for weaving."

he novelty of the invention consists, first, in composing the "heald" or "harness" employed in looms veaving of two distinct materials, such as metal and yarn, composed of fibrous material, the two fibrous rials being knitted and attached to top and bottom heald staves in the ordinary manner. Secondly, oating or covering the combined material with a stout varnish in order that any unevenness in the aces of such combined materials may be softened down and rendered smooth so as to offer the least ional surface to the warp threads when shedding.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 13.—N° 2538.

TER, SAMUEL CUNLIFFE.—(*Provisional protection only.*)—" Improvements in machinery for combing ool, silk, and other fibre."

place of employing the cleaning instruments described in the Specification of the Patent N° 2832 he year 1859 to act on the fibre which held by the circular nipper or holder, cleaning instruments posed of cards are employed, the card teeth which are first to act being longer and coarser than e on the finishing side, and the teeth being made with round wire. Or the teeth may be all of one th.

he Specification also describes using in place of cards in this class of machine combs made coarser ne end and finer at the other; the combs may be carried by an endless band or otherwise, and be ed with gas or suitable fire heat.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 13.—N° 2539.

MPTON, THOMAS RUSSELL.—" Improvements in grinding coal, in preparing coal for burning, in pplying it to furnaces, and in burning powdered coal, also in apparatus to be used for these purposes."

his Provisional Specification describes grinding coal between millstones or otherwise, at the same time loying an artificial current of air to carry off the coal as it is reduced; also apparatus for measuring dered coal, to supply it evenly to a stream of air; and also mixing the powdered coal with the air so they may be burnt together; also of supplying such mixtures to furnaces; and arrangements of furnaces pparatus for burning powdered coal.

Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, August 13.—N° 2540.

YORK, HENRY KINNAIRD.—"Improvements in treating cast iron and other metals and in apparatus "employed therein."

This Provisional Specification describes apparatus for breaking up cast iron into small particles for the purpose of making steel therefrom. The apparatus consists of steel or iron teeth held in two discs mounted on an axis; the iron to be reduced is pressed forwards in a trough to the centre of the discs. In some cases the teeth are mounted on a single disc and in some cases on the periphery of a drum.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, August 14.—N° 2541.

BINKO, HENRY BOCK.—(*Provisional protection only.*)—"Improvements in the treatment and preparation "of indigo for laundry and other like purposes."

The production by the treatment of and preparation from indigo of two novel articles called "indigo carmine" or "carmine blue" and "blue paper" to be used for laundry purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 14.—N° 2542.

SHAEN, WILLIAM.—(*A communication from Johann Friedrich Eduard Schultze.*)—"Improvements in the "manufacture of explosive compounds."

The new compound is formed by combining nitro-glycerine with Schultze's wood powder either alone or together with other explosive substances.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 14.—N° 2543.

EVOTTE, CHARLES.—"A portable machine for turning, dividing, and cutting wooden cogs of cog wheels "of all descriptions and sizes, either in building shops or manufactories, when such wheels require to be "supplied with fresh cogs."

This machine is composed of a cast iron frame, on or in which are fitted the shafts, wheels, and tools required to give the motion for turning, facing, dividing, and cutting to shape rough wooden cogs previously inserted in the rings of cast iron wheels, which may be either new ones or old ones requiring to be supplied with fresh cogs.

The cog machine being fixed as near the wheel as possible, the outside of the cogs are first turned true by means of two cutting blades on the top of a shaft turning with great speed and sliding to and fro. The ends of the cogs are then cut to get them of a same length by two circular saws or cutting blades driven with great speed by steam or a hand crank. The rough cogs having been turned and faced are next divided by an apparatus fitted on the cog machine, and consisting of an endless steel ribbon or chain placed on the periphery of the cogs so as to encircle the wheel stretched by a roller or curved piece fitted on the dividing apparatus, which is actuated by endless screw driving wheels corresponding to the decimal divisions of dials, so that by merely turning a handle the endless ribbon causes the wheel to revolve, whilst hands show on the dials the true unfolded length of its circumference, and the divisions may be marked with the greatest certainty and accuracy. Finally, the cogs are cut out to shape by two blades fitted like the turning ones on a boss carried by a vertical shaft driven by toothed wheels and pinions, and which can be inclined according to requirement.

[Printed, 2*s*. Drawings.]

A.D. 1868, August 14.—N° 2544.

NELSON, GEORGE.—"Improved apparatus and means for disinfecting clothing, bedding, furniture, "upholstery, and articles of like nature."

This invention consists of a double cased iron chest or box heated in such casing by means of gas jets placed underneath the bottom of the chest, the heated air being conveyed alternately from end to end of the casing by means of tiers of angle iron placed in and arround the same at suitable distances apart, and having their alternate opposite ends omitted, so that the hot air heats equally the chest; and, finally, on reaching the top is passed into a flue provided for the purpose.

The gas jets are entirely enclosed with the exception of the requisite air for combustion. The lid of the chest is raised by a weight and chain, and adjustable bars near the top of the box receive the articles to be disinfected. A cold air valve may be introduced in a suitable part of the chest for the purpose of clearing (in conjunction with the flue valve) the chest of noxious vapours.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 14.—N° 2545.

, **JACOB BAYNES.**—"Improvements in coating iron and steel with gold, silver, and copper,
ratus for carrying out the same."
ion consists, 1st, in cleaning or purifying the metal to be coated by nascent hydrogen in
lution, preferably a solution of hydrated oxide of sodium.
boiler and vat in which the solution is worked, communicating with each other by pipes.
rning in the silver and gold by means of a bath of melted lead or an alloy of lead, heated
heat for tempering steel in an iron pot placed on the bottom of a furnace, and with the
round it, so that the heat is equally distributed, into which the articles are plunged, and
d in water.
No Drawings.]

A.D. 1868, August 14.—N° 2546.

WILLIAM EDWARD.—(*A communication from Louis Warnery.*)—(*Provisional protection only.*)
ents applicable to machinery for combing silk and other fibrous substances."
ing combs or cards are attached to an endless chain, and when passing under the discharging
drum are brought against curved guides which raise, lower, or incline them in such a manner
of teeth or pins are brought in succession under the action of the teeth of the taking off

No Drawings.]

A.D. 1868, August 15.—N° 2547.

H, JOHN.—"Improvements in submarine telegraphy."
on consists in submerging at any point in a submarine telegraph line and connected therewith
batteries or relays contained in a watertight vessel which shall be sunk with the cable.
eans the continuity of long lines of submarine telegraphic cable may be broken at any desired
eat advantage in regard to economy of construction, laying, and efficiency in working the line.
No Drawings.]

A.D. 1868, August 15.—N° 2548.

RLES DENTON.—(*A communication from Jules Gabriel Alfred Gros.*)—(*Provisional protection*
provements in the production of brown colouring matters for dying and printing."
tion consists in mixing aloes with nitric acid, and after reaction has taken place, combining
ked lime. The brown colouring matter produced is mixed for dying with cream of tartar or
nd the tints are regulated by steeping in different mordants. The colouring matter is equally
printing on woollens and silks.
No Drawings.]

A.D. 1868, August 15.—N° 2549.

, **JOHN**, senior, **FLETCHER, JOHN**, junior, and **FLETCHER, WILLIAM.**—"Improvements
ry for grinding sand and other substances."
tion is applicable to mortar mills and other similar machines, and consists,—
pporting the circular trough on antifriction rollers.
in raising and lowering the friction rollers by screws and worms, or wheels driven by a horizontal
is turned round in either direction by two carrier pinions fixed to a swivel plate.
an improved mode of connecting the friction rollers to their axle, and of protecting the joints
d water.
d. Drawing.]

A.D. 1868, August 15.—N° 2550.

N, JAMES.—(*Provisional protection only.*)—"An improved pencil for marking on linen and
cs."
vements relate to combining nitrate or other suitable salt of silver with blue, lamp, bone, ivory,
mposition-black, black or Italian chalk, gamboge & isinglass, to which ammonia, perchloride
lution of gold and milk of sulphur may be added.
ound obtained is used in wood or other holders as an ordinary pencil.
to be written upon is preferred to be damped in a solution of soda.
d. No Drawings.]

A.D. 1868, August 15.—N° 2551.

ROBINSON, Robert, and EDMESTON, Gray Denison.—"Improvements in or applicable to lathes, " and in mechanism for varying rotating speeds, applicable to other tools, machines, and shafting."

1. It consists in combining differential gearing acted upon by expanding or other cones, with lathe spindles to vary the speed.

2. Also in combining differential gearing with expanding cones to vary speeds while the cones are in motion.

3. Also when two sets of expanding cones are worked together, it consists in applying springs tending to prevent one set of cones from expanding, the springs giving way as required.

4. Also in arranging two sets of expanding cones with their axis in the same line, and driving from one to the other over carrier pulleys, the two adjoining cones being moveable endways, so that the end thrust caused by the belt on one set will be counteracted by the end thrust upon the other end.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, August 15.—N° 2552.

LEAK, Alfred John, and LEAK, Elias.—(*Provisional protection only.*)—"Improvements in the mode " of and means or apparatus for driving or actuating machinery or apparatus employed in the manufacture " of pottery and other like articles."

This invention consists in the application and use to and in the driving or actuating of the machines known as potters' "jiggers," "laths," and throwing wheels of an endless chain or chains gearing with chain pulleys or toothed wheels in substitution for long shafting and the ordinary driving straps and pulleys hitherto employed.

For light work straps keep in tension by tension pulleys mounted on weighted levers may be used in transmitting motion from one machine to another. the straps passing over smooth pulleys.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 15.—N° 2553.

REISSMANN, Henry. — (*A communication from Friedrich Wilhelm Bossert.*) — (*Provisional protection only.*)—"A new or improved apparatus or fountain for dispersing or throwing liquids."

This invention consists in the construction and employment of apparatus or fountains for throwing liquids in the following manner:—A hollow flexible vessel, made by preference of vulcanized india-rubber, contains the liquid to be projected; the base of the vessel is attached to a button on a rod free to slide through a frame which is made in a piece with or supported by a pedestal or pillar. A to and fro motion is imparted to the rod by a lever or button, and when a lever is employed it passes through the pedestal. A nozzle is fitted to the top of the flexible vessel, which is provided with ornamental or other arms, whereby it may be removed by unscrewing or otherwise; on pressing up the rod below the liquid in the vessel may be projected to a more or less considerable distance as desired, a basin surrounds the nozzle to catch and preserve the liquid projected, and which runs back into the vessel by unscrewing the nozzle. The whole apparatus may be surrounded by an ornamental frame, to which may be attached such articles known as ladies' companions, cigar holders, and other useful or ornamental articles.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 15.—N° 2554.

SCOTT, Henry Young Darracott.—"Improvements in pottery and other kilns."

The arches or domes of the kilns spring from points below the openings for the fire-places and therefore rest on a solid foundation which is not affected by the heat of the fires.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, August 15.—N° 2555.

MOHR, Charles, and SMITH, Samuel Edmonds.—(*Provisional protection only.*)—"Improvements in " the manufacture of cages, baskets, guards, and other articles of wirework."

This invention consists in connecting and securing the wires of which articles of the descriptions above-named of wirework are or may be formed by casting upon such wires bars, bands, or connecting pieces by the employment of moulds of any suitable description.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 15.—N° 2556.

RK, ALEXANDER MELVILLE. — (*A communication from Thomas Gray.*) — "Improvements in the
nufacture of size."

ake a resinous size for use in paper making and other purposes as follows :—I first bleach or treat the
in a boiler containing pure water and salt of soda or other alkaline salt dissolved by heat.

hen prepare the size by introducing the resin, still hot, into a bath of chloride of sodium and water,
is then heated and stirred until the resin and the salt combine, when the mixture is allowed to
and form a deposit of size, the liquid being drawn off and discharged.

rinted, 4*d*. No Drawings.]

A.D. 1868, August 15.—N° 2557.

RLE, JOHN HALES, and BROWN, THOMAS.—" Improvements in tents."

cording to this Provisional Specification a rectangular tent with upright walls and with a ridge roof
de with the cover in one piece.

aves are planted at each corner and they lean together and support the extremities of the ridge. At
end of the tent cords pass from the upper ends of the staves to tent pegs. Stretchers are applied,
ng across the ends of the tent between the upper corners of the side walls.

Printed, 10*d*. Drawing.]

A.D. 1868, August 15.—N° 2558.

EUT, WILLIAM BANCROFT.—" Improvements in curing, drying, and extracting molasses or liquid
m sugar and other substances, and in apparatus employed therein."

cording to this Provisional Specification the sugar is placed in a vessel with a wire gauze or similar
m, and an air tight cover is put on the vessel.

ere is a space beneath the vessel above mentioned in which a vacuum is produced and then the enclosed
drawn down through the sugar, carrying much of the moisture with it. Air is then admitted over
ugar which, forcing its way downwards through the sugar into the vacuum, completes the curing.

her substances, such as brewers' grains, may be similarly dried.

Printed, 1*s*. Drawings.]

A.D. 1868, August 17.—N° 2559.

DE, WILLIAM JOHN.—" Improved means or apparatus for holding candles in the sockets of candle-
cks and raising and burning the ends out."

piece of cork or other material fitting the socket of the candle-stick with plates top and bottom through
h a pin is passed, the upper end made into a point to stick the candle on, and the lower end rivetted or
in some other way to hold them together; attached to the upper plate by hinges are springs which
the candle when forced down in the socket and hold it firm. When the ends are required to be burned,
pparatus is pulled up by the same springs, which then fall out of the way over the flange of the
estick.

rinted, 4*d*. No Drawings.]

A.D. 1868, August 17.—N° 2560.

H, ALEXANDER.—(*A communication from Robert Smith.*)—" Improvements in the manufacture of
ar, and in apparatus therefor."

improvements may be carried into effect under two general systems or main modifications, the minor
of which may be more or less varied.

he first system the apparatus comprises a number of rectangular vessels or pans set on two straight
and with the fire gases from one or more furnaces at one end passing along under and heating them.
ttoms of the pans are formed with corrugations to increase the heating surface, and the corrugations
posed across the flue for the fire gases to encounter them. There are three evaporating and four
ing pans. In operating with this apparatus cold cane juice from the mill, after being defecated with
other agent, is run into the clarifying pans and is brought to the boil, the scum as it rises being
into the gutter in front. After being well cleaned the juice from No. 4 (clarifying) pan is run through
and pipes into No. 3 (evaporating) pan as required. Subsequently the contents of the other clarify-
ns (Nos. 5, 6, and 7) are run into No. 3 (evaporating) pan when it is ready for them. The juice in
will throw up more scum which is to be brushed into a gutter fitted between the pans Nos. 3 and 4;
No. 3 will be ready to supply No. 2 (evaporating) pan wherein the juice or syrup is further cleaned by

brushing any impurities that rise to the surface over a low partition into No. 3 pan. The syrup is next transferred from No. 2 into No. 1 (evaporating) pan, in which it is concentrated to a density of about 25 degrees Beaumé.

In the second general system clarifying pans are used as in the first; and also three or more of the evaporating pans, but the latter have covers to retain the steam, and this steam is used for heating an improved or ordinary vacuum pan. A pipe from the top of this vacuum pan communicates with a tubular surface condenser in which the fresh cane juice is used as the cooling medium, thereby utilising the heat. A pipe from the surface condenser communicates with an injection condenser and air pump, whereby a sufficient vacuum is insured. In one modification the vacuum pan is made with vertical tubes fixed in the bottom with their upper ends closed, but with their lower ends open to steam which has access to them by a chamber formed under the bottom. In another modification the vertical tubes and their tube plate are inverted so that the syrup will be inside of them instead of outside as in the first modification. In operating with this apparatus the juice, after being clarified in pans Nos. 4 to 7 is transferred to hemi-cylindrical cisterns, where impurities not removed by the raking are got rid of by settling or otherwise. It is then received into a montjus and forced into No. 1 covered evaporating pan. No. 1 will supply No. 2, and No. 2 will supply No. 3; No. 3 will discharge into the vacuum pan with vertical pipes, and when the syrup in that pan is sufficiently concentrated it will be admitted by a pipe into a vessel like a montjus placed at a lower level and which is put into communication with the top of the vacuum pan by a second smaller pipe. When the charge of syrup is all in the vessel the communications with the vacuum pan will be closed, and steam will be let on and will force the syrup through pipes to wherever required.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, August 17.—N° 2561.

BEANES, Edward.—(*Provisional protection only.*)—" Improvements in the manufacture of brewers' " finings."

My improvements in the manufacture of brewers' finings consist in neutralizing solutions of isinglass in caustic alkalies by means of an acid sulphite or bisulphite of the base used for making the solution so as to render it available for use as brewers' finings.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 17.—N° 2562.

HUNT, Bristow.—(*A communication from Edmond Grandidier and Marcel Rue.*)—" Improvements in the " mode of decomposing the sulphurets of iron contained in ores, coal, coke, and other mineral products, and " in apparatus therefor."

This invention consists in the application of heat and compressed air, or of heat and compressed steam, to the decomposition of the sulphurets of iron contained in various mineral products, such as ores, coal, coke, and other substances.

A cylinder of the required strength and capacity is mounted on a furnace of any suitable description.

The air or steam is admitted by means of conduits from a force pump or boiler, an effective pressure of (say) 2 atmospheres being generally sufficient for the desulphurisation.

Openings are made in the cylinder for the reception of the materials to be treated, which are withdrawn (by two ports at either end of the cylinder) on the completion of the operation, and valves are placed for the discharge of the compressed air or steam previous to the withdrawal of the contents.

The waste heat of blast or other furnaces (which may be near) may be utilized for the purposes of this invention.

[Printed, 8*d.* Drawings.]

A.D. 1868, August 17.—N° 2563.

STOCKMAN, Benjamin Pryor.—(*Provisional protection only.*)—" Improvements in water meters."

According to this Provisional Specification two cylinders are used with pistons, to the lower sides of which the water is alternately admitted; the piston rods have racks upon them gearing with a spur wheel, which is caused to rotate partially first one way and then the other. On the axis of this wheel a tumbling arm works; it is raised by studs on the wheel until over the centre, when it falls, and in falling it moves the valve.

The valve is a disc with suitable cavities working on a face, with passages in it communicating with the cylinders and with the inlet and outlet pipes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 17.—Nº 2564.

N, WILLIAM EDWARD.—(*A communication from John Reinhold Anderson.*)—"An improved instru-
be used as a fog alarum and to produce audible signals."
et provided with a reed is placed inside a cylinder, and air is compressed and forced through the
means of a reciprocating hollow piston.
8*d.* Drawing.]

A.D. 1868, August 17.—Nº 2565.

JOSEPH.—"Improvements in the manufacture of elliptic springs for carriages and other
"
ntion relates to a new and improved method of manufacturing heads for elliptic springs; and
of the said invention consists in constructing right and left dies for punching out ears of any
rm or size to be fixed on the ends of the main leaf of an elliptic spring preparatory to welding,
tly facilitates the making of heads to the same.
8*d.* Drawing.]

A.D. 1868, August 17.—Nº 2566.

S, WILLIAM.—(*Provisional protection only.*)—"Improvements in sewing machine needles."
edles are to be used chiefly for sewing leather, canvas, or other thick or hard materials.
rovements consist in making the needle of a triangular flattened form, resembling the blade of
, and in forming the eye in the widest direction from the back to the edge, so as to enable
to be placed much closer together than usual.
lle is placed directly across the line of sewing instead of obliquely or in line therewith as usual,
ove for the sewing thread is formed on the back of the blade shaped needle.
4*d.* No Drawings.]

A.D. 1868, August 17.—Nº 2567.

N, JOHN HENRY.—(*A communication from Simon Howes and Alphus Babcock.*)—"Improvements
nery or apparatus for cleaning grain."
ention relates to what are commonly known as "smut" machines for removing dust, "smut"
other refuse or foreign bodies from grain.
g to this invention the "smut" machine is provided with two stationary vertical hollow cylinders
entrically, in the inner one of which revolve a set of scouring beaters attached to a vertical shaft,
t carries near its upper end a revolving suction fan working in a fan chamber situate above
linders aforesaid, and communicating therewith by a central mouth or opening. This chamber
with a discharge spout on its circumference for the discharge of the currents of air produced
along with the impurities removed from the grain by the scouring beaters. On rotating the
al shaft, a central draught of air from the bottom of the stationary cylinders is forced or
ards through the inner casing or cylinder enclosing the scouring beaters, and also between
and the outer casing or cylinder of the machine or mill. Both these upward currents of
the fan chamber before referred to, entering by the central mouth or opening in the bottom
mber, and passing out by the lateral spout or mouth.
8*d.* Drawing.]

A.D. 1868, August 17.—Nº 2568.

RY, GEORGE FRANCIS, and CHADWICK, THOMAS.—(*Partly a communication from Auguste*
"Improvements in sewing machines."
provements are somewhat similar to the Wheeler and Wilson sewing machine, except that the
king the loop of the needle thread round the shuttle is a segmental arm having an oscillating
and that the "shuttle" is in a fixed cavity and does not rotate, and that tension can be put upon
thread.
ovements also consist in the combination and arrangement of the parts of sewing machines
s above referred to. Two shafts are used, one above, the other below the cloth table. The needle
ked from a crank pin upon the upper shaft, which by a crank pin or excentric acting acting
oothed quadrant or its equivalent gives oscillatory movement to the lower shaft upon which the
mental arm is placed. The feed is either above or below the cloth plate. The shuttle retainer
n one side; the table can be hinged or made to slide if required.
1*s.* 6*d.* Drawings.]

A.D. 1868, August 17.—N° 2569.

CORBITT, William.—" Improvements in decorating the surfaces of stoves, grates, fenders, and fire " irons."

This invention relates to an economical and effective mode of decorating the surfaces of stoves, grates, fenders, and fire irons, and consists essentially in the employment for that purpose of thin plates of steel or other metal which have previously had ornamental designs etched thereon. The required pattern or design is produced on each separate metallic plate by the transfer or stencilling processes or by hand drawing, and the parts which are unprotected by the ink or varnish are etched by and in the well known manner. The etched parts or back ground may, if desired, have a deposit of gold or other precious metal applied thereon, whilst the raised portion may be polished or burnished according to taste. These etched plates are to be so shaped as to be capable of covering all or any portion of the stoves, grates, or other surfaces to be ornamented, and are secured thereto by the aid of cement, screws, rivets, or otherwise.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 17.—N° 2570.

SIMPSON, Charles John, SIMPSON, Walter, SIMPSON, Arthur, and SIMPSON, Frederic. —" Improvements in machinery or apparatus for sizing and drying yarns for weaving."

This invention relates to a novel combination and arrangement of apparatus for sizing and drying yarn for weaving whereby the yarn is better sized and is stronger than when sized with an equal quantity of sizing used in the ordinary machines.

According to our invention we employ one or two size troughs or boxes and place one of the two drying cylinders at present in use or an extra drying cylinder above or between such trough or troughs, so that the yarn after it leaves the trough or first trough may be dried or partially dried by passing round the first drying cylinder before it enters the trough again or the second trough where it receives an additional coat of size. From this second trough, or after the yarn has passed through the trough the second time, the yarn passes round the second drying cylinder situate at the end of the machine, and on leaving this cylinder it is guided by means of guide rollers over a revolving fan which greatly assists the drying process. A presser or cleaner is caused to bear against the surface of the first drying cylinder by the aid of a spring or otherwise in order to maintain the surface of such cylinder perfectly clean.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 17.—N° 2571.

ALBINI, Agusto, and VAGLICA, Joseph.—(*Provisional protection only.*)—" Improvements in electro-" magnets."

According to the invention, in lieu of simply connecting the end of the wire of one coil of the electro magnet directly with the corresponding end of the adjoining coil as heretofore, the negative end of one coil is connected with the negative end of the adjoining coil, and the positive end of the one coil with the positive end of the other, by which means the current from one end of the battery enters both coils simultaneously and leaves them also simultaueously in lieu of as heretofore, such current having to pass into and from the two coils in succession.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 17.—N° 2572.

BEHRENS, Henry John, and DART, Edward.—" Improvements in machinery for obtaining motive " power, parts of which improvements are also applicable for other purposes."

This invention possesses the following characteristic features :—

First. In the employment of pistons, acting in pairs, in annular chambers communicating with one another and capable of being subjected to the action of steam, water, or any other fluid or liquid for giving motion to shafts to which the said pistons are keyed.

Second. In the employment of fixed naves having an indented portion in the circumference to form a joint with the external surface of the pistons, and so to prevent the passage of steam or other fluid.

Third. In the application of a system known as " Woolf's " to rotary engines, by adding to an original machine a second of greater dimensions, the steam issuing from the first passing into and acting on the other by expansion.

Fourth. In the relative position of the different pistons to one another (as described in the Specification) in order to take advantage of the greatest effect the steam is capable of producing.

Fifth. In certain arrangements of the steam passages in combination with the construction of the slide valves to reverse the motion of the machine.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, August 17.—N° 2573.

PS, **John**.—(*Provisional protection only*.)—" Improvements in stoves and fire-places."
ıdrical valve or damper, with a knob and rod attached thereto, moving in a slot in the top front of
, is placed in connection with a flue over and behind the fire place. This flue communicates at
ith a flue from back of ashpit, in front with an opening over the fire, and at top with the chimney.
e under the fire is closed in front. The fire box is formed of fire clay, with iron bars in front and
ing at bottom. The ashes fall into a pit sunk in hearth; the ashpit is emptied by removing a
he hearth in front of stove. A sloping back is fitted into the opening over the fire, dividing flue
o two equal parts, through which smoke and products of combustion pass from under and over the
e chimney. The draught is checked, fuel is economized, and the fire is made to burn steadily by
drical valve or damper, which is pushed into the flue to any extent by drawing down the knob and
hed thereto at the top front of the stove. By the arrangement of the stove there is more heat
nto the rooms, more perfect combustion, and less consumption of fuel, and less formation of smoke
rdinary stoves and fire places.

d, 4*d*. No Drawings.]

A.D. 1868, August 18.—N° 2574.

, **John**.—" Improvements in machinery for cutting shives, bungs, corks, spiles, and vent or other

improvements refer to machinery for which a Patent was granted to George Redrup on the 24th of
9, No. 1520. The Specification of said Patent claims, describes, and illustrates three moveable
ich are made to slide lengthways or up and down, namely, the central spindle, the cutter spindle,
ack centre. I construct the said machines with only two of such parts to slide lengthways or up
, namely, the centre spindle and the back centre. In case of vertical machines I prefer to apply
t on the centre spindle directly on the top of the same.

d, 8*d*. Drawing.]

A.D. 1868, August 18.—N° 2575.

E, **John Garrett**.—(*A communication from Charles Umfrid*.)—" Improvements in mills for
ng."
vention relates to the arrangement and construction of mills for grinding grain or other substance,
three millstones are employed, one running and two standing, in such manner that the two surfaces
d running millstone act as working parts, and which are in contact with the surfaces of the standing
s, through the eyes of which the grain to be ground is conducted.

ed, 8*d*. Drawing.]

A.D. 1868, August 18.—N° 2576.

ERALD, **Desmond Gerald**.—(*Provisional protection only*.)—" A new or improved mode of con-
ng electric telegraphs and voltaic batteries."
or improved mode of constructing electric telegraphs principally consists in the insulation of a
g current, not as hitherto by means of a dielectric or insulating material properly so termed, but by
good conductors of electricity (metals and electrolytes) so arranged as to generate an electromotive
ich opposes the escape of the signalling current when the latter is transmitted in a particular

compound voltaic battery.

ed, 4*d*. No Drawings.]

A.D. 1868, August 18.—N° 2577.

ES, **John Sampson**.—" Improvements in ships' signal lamps."
ple features of novelty in this invention is the construction of a lamp which can be used as a mast-
t, port or starboard light, or an ordinary anchor light. This I effect by means of slides, which
olored glass, being raised or lowered as may be required.

ed, 8*d*. Drawing.]

A.D. 1868, August 18.—N° 2578.

, **Paul Rapsey**, and HODGE, **William**.—" Improvements in the manufacture of black or brown
nts to be used in the manufacture of paints or printing ink, and in the treatment and preparation
ain natural products used in the manufacture of such pigments."

The main elements of this invention is, firstly, in the use of certain natural products containing carbon and other products containing iron, and in the manner of combining such products as to produce carbides of iron. Secondly, in the treatment of certain compounds containing carbon, and cleansing such compounds of impurities, and in the manner of using such compounds in combination or by itself in the manufacture of paint or printers' ink.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 18.—N° 2579.

MARTIN, David, SMALL, William, HUTTON, Alexander, and KEY, Andrew, Executors of Douglas Fraser.—" Improvements in softening, preparing, and spinning flax and similar fibrous " materials and finishing yarns made thereof, and in apparatus therefor."

The first improvement consists in softening the hard ends of flax by means of suitable apparatus, whereby the flax is made to yield more in the hackling and to join better when spun into yarn.

The second improvement consists in treating the tow (before sending it to the carding engines) in combined cramping and teasing apparatus by which it is softened, mixed, damped, and teased.

The third improvement consists in applying steam to the flax or similar rove when spinning it.

The fourth improvement consists in finishing the flax or similar yarns by submitting them in the hank form to shaking, polishing, and softening actions in apparatus comprising two rotating handwheels, by one of which the hanks can be twisted backwards and forwards, whilst by the other they can be stretched and shaken.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, August 18.—N° 2580.

LANDLESS, James.—" Certain improvements in boilers or generators for steam, which are also applicable " for other heating purposes."

The novelty of the invention consists in placing perforated or latticed dampers or screens in the flues of steam boiler furnaces, or furnaces or fires employed for heating purposes to act as an intersected or open abutment against which the unconsumed gases in their passage into the flue impinge, becoming thereby ignited, & not only consume the smoke, but give a more thorough combustion to the fuel.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, August 18.—N° 2581.

LEDGER, Edward.—(*Provisional protection only.*)—" Improvements in machinery for obtaining motive " and mechanical hydraulic power."

A different description of pump to obtain mechanical power. A different description of crank in connexion with hydraulic rams to obtain motive power.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 18.—N° 2582.

GAY, Louis.—" Improvements in machinery for washing wool and other fibrous materials."

The invention consists in the employment of a cylindrical or preferably a conical vessel, to which a slow rotary motion is imparted. This vessel is placed horizontally or nearly so, its extremities are only partially closed, and internally it is provided with a series of projecting points or hooks.

The fibrous material is fed in at one of the extremities, and by the rotation of the apparatus gradually conducted to the other extremity, from whence it is discharged, whilst the liquid used for washing is introduced at the extremity from which the wool is discharged and drawn off at the extremity where the wool is introduced.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 18.—N° 2583.

THOMSON, William.—" Improvements in tools or apparatus for expanding and cutting tubes and metallic " rings, part of which improvements is applicable for withdrawing ferules from the ends of boiler tubes."

The feature of novelty which constitutes this invention is the construction of an instrument which consists of a body piece, to which expanding cones are fastened, this end being held in dovetailed slots in the face of the body, so that they may be free to move in a radial direction to or from the central part of the expander.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, August 19.—N° 2584.

DEANE, Edward.—(*Provisional protection refused.*)—" A new & improved stove and cooking apparatus " by which a saving of fuel is effected."

ove or cooking apparatus, with oven, boiler, hot plate and roasting fire, with a novel construction of apable of consuming either coal, coke, wood, or turf.

nted, 4*d.* No Drawings.]

A.D. 1868, August 19.—N° 2585.

IANN, Julius.—(*Provisional protection only.*)—" Improvements in apparatus for generating and fying coal lighting gas, the said apparatus being adapted to household or domestic use, the gasholder matically regulated, and the surplus gas produced used as fuel."

invention consists in adapting a retort to domestic or kitchen stoves and any places where the ry heat for generating gas can be obtained.

retort being filled with mineral coal or boghead is heated by the fire used for other purposes, and is munication with a gas washer and purifier with a receptacle to receive the coal tar and a gas holder ter tank. The retort is so made that it may be easily taken out for filling, and the purifier contains l with perforated bottom for holding lime or other purifying substance.

pressure of the gas is regulated by a self acting arrangement in such a way that when it becomes too cock closes the passage to the purifier, while another cock opening permits the gas from the retort to the fireplace and be used as fuel, this action being indicated on a dial and an alarm bell ringing at ne time.

nted, 4*d.* No Drawings.]

A.D. 1868, August 19.—N° 2586.

RBURY, John Henry.—" Improved machinery and means in connection therewith to be used in nanufacture of earthenware and other articles made from plastic materials."

n the top of a pair of metal frames placed parallel with each other, as in steam hammer frames, and l to a suitable foundation plate is mounted a shaft; to this shaft is secured an eccentric which works n the frame and is connected to a crosshead which slides upon plane surfaces inside the frames, and carries a heated die. Near the foundation plate and directly under the die is fixed a mould of any d shape and furnished with a false bottom. The plastic material to be moulded is placed within the (which may also be heated) and upon the die descending receives the desired impression. The false is now raised by suitable mechanism simultaneously with the die, and the article moulded is ejected e mould and removed by the attendant or carried away by an endless band. Sometimes plaster of oulds, or moulds made of tin, copper, or brass are used in lieu of iron ones, more especially where articles, such as plates, are being made, such moulds being mounted upon a suitable cushion and rds removed to a convenient drying place.

false bottom (which is chiefly used for bricks, tiles, and articles of a like nature) is recessed round its nd furnished with some suitable absorbent saturated with a lubricant for the purpose of greasing the By a simple arrangement on one of the side frames oil or other lubricant is thrown in the form of ither by a piston forcing it through a perforated pipe or by the pressure generated by slight heat on die or mould surfaces.

ome cases I prefer to dispense with the eccentric arrangement and to substitute a steam cylinder, ng uniformity of stroke by means of an overhead crank connected with the upper end of the piston the usual manner.

nted, 10*d.* Drawing.]

A.D. 1868, August 19.—N° 2587.

URY, John, and SHAW, John.—(*Provisional protection only.*)—" Improvements in force pumps loyed in connection with hydraulic presses for packing or pressing or the like uses."

invention relates to the packing of the plungers of press pumps. The pressed leather or leathers nto the upper part of each pump barrel and the nut or gland used to retain the same in position are sed with, and a cupped leather is fixed in a cup shaped recess formed in the end of the plunger, the ather moving with the plunger.

nted, 4*d.* No Drawings.]

A.D, 1868, August 19.—N° 2588.

Y, Frederick.—" Improvements in treating and utilizing waste sulphate of iron solution arising from cleansing of iron surfaces in the manufacture of tin plates."

invention consists in the treatment and utilization of crude sulphate of iron, obtained as above by the following means :—

Decomposing it by ammonia, either in the liquid or gaseous form, and so producing oxide of iron lphate of ammonia.

2nd. By effecting its decomposition by carbonate of ammonia or by means of carbonic acid and ammoniacal gases, and under both these systems of treatment the gas or gases are preferrably blown through the liquid to be decomposed under the provisions of a Patent, No. 2067, for which Provisional Protection was granted to Isham Baggs and Frederick Braby on the 27th of June 1868.

3rd. The utilization is effected by treating the crude solution in manner following:—Sulphuric acid added and air is blown through the mixture or caused to come in intimate contact with it when persulph of iron is formed.

4th. The crude solution is neutralized by the addition of scrap iron or oxide of iron in powder boiling or digestion, and it is then mixed with a soluble salt of baryta, lime, or lead, producing an insol sulphate, and a soluble salt of iron by double decomposition.

[Printed, 4d. No Drawings.]

A.D. 1868, August 19.—N° 2589.

CLARK, Alexander.—(*A communication from Louis Henry Dennis and Otho Richard Brown.*)—“ improved compound for tanning leather.”

The invention consists in the combination of catechu (or cutch) with common lye in various propo to form a tanning compound.

This mixture may be used alone or together with coloring matter, such as alum, and with salt or material serving to plump the leather.

The mixture is boiled together and the leather immersed in it long enough to be thoroughly tanned.

[Printed, 4d. No Drawings.]

A.D. 1868, August 19.—N° 2590.

DAVEY, William Hook.—(*Provisional protection only.*)—“ Improvements in apparatus for drying “ and other fabrics or substances.”

The apparatus consists of two steam chests placed horizontally one over the other in a suitable with a space between for the passage of an endless chain or apron, upon which is placed the substance to be dried.

The endless chain passes round drums (one at either end of the apparatus) having motion imparted any suitable motive power.

The chain I prefer to form of links of considerable length in a double series, with the intervening covered with wire gauze or other material to form a surface for the articles being dried.

A constant circulation of steam is maintained in the chambers, which have free communication with other, the steam being supplied from a suitable boiler.

[Printed, 4d. No Drawings.]

A.D. 1868, August 19.—N° 2591.

HEATON, John.—(*Provisional protection only.*)—“ Improvements in rails for the permanent way “ railways.”

This invention relates to combined steel and wrought iron rails, and consists in combining a steel wrought iron rail forming the wheel bearing surface of the compound rail with wrought iron bars rolled such a form as to fit accurately against the opposite sides of the web of the steel rail and at the same form a base or flat bottom flange for resting upon the sleepers. The two wrought iron bars are bolted rivetted firmly together so as to hold or grip the web of the steel rail securely between them, the forming a durable and economical rail for the permanent way of railways.

[Printed, 4d. No Drawings.]

A.D. 1868, August 20.—N° 2592.

SHAW, Thomas Ramsden.—“ Improvements in oil testers or apparatus employed to ascertain the “ efficiency of oil, grease, and equivalent matter when used as lubricants.”

This invention relates to the mechanical testing of lubricants, and consists of an arrangement whereby the force of the frictional resistance to the rotation of a disc against a stationery block of metal and the heat produced by the friction are both indicated. The disc is mounted on the upper end of a vertical shaft, and the circular block of metal rests on the said disc. To prevent the continued rotation of the block a cord or band is attached by one end to the side of the said block and by the other end to a spring balance, the said balance indicating the force necessary to prevent the rotation of the block. The block is furnished with thermometer, which indicates the heat produced by the friction. A further portion of the invention consists of a combination of two or more sets of oil testers driven by one shaft.

[Printed, 10d. Drawing.]

A.D. 1868, August 20.—N° 2593.

OND ,William John.—"An improved mode of preparing threads of cotton, silk, wool, or any fibrous stance for the market."

winding a ball with a hollow centre fixing it tight and stationary into a paper or cardboard box a fastened down lid or cover, and having a bead or eyelet inserted in front, through which the thread un without damage from friction, thereby giving freedom from soiling and entanglement, with ness.

rinted, 8*d.* Drawing.]

A.D. 1868, August 20.—N° 2594.

YER, Joseph.—"Improvements in the construction and method of hanging, suspending, and ancing window sashes."

is invention for improvements in window sashes consists cheifly in the mode of rebating the joints of w sashes at the sides or edges or the middle joint, where the two sashes meet together when shut.

d in the method of hanging the window sashes by the introduction of a tooth or cog wheel fixed in the f sash frame for the purpose of raising or lowering the window sash.

e balancing box has some novelty in the mode of construction, as also for the easy manner it can be ted or weighted to suit either heavy or light plate glass window sashes. In the preparation of the ial for balancing of window sashes presents one great feature, that is, by the means used for granulating or refuse of iron, which can be applied with the balance box to the present existing window sashes.

rinted, 8*d.* Drawing.]

A.D. 1868, August 20.—N° 2595.

KIN, George.—(*Provisional protection only.*)—"A new instrument or apparatus for attaching to pianotes in order to facilitate the study of the notes."

is invention consists in constructing a diagram of the keyboard in the form of a rail fixed in front of lightly below the keys of the piano. Each key on the diagram is exactly oppose the corresponding key e keyboard, and is marked with its denominations and with the corresponding note on the stave as it rs on the music sheet.

rinted, 4*d.* No Drawings.]

A.D. 1868, August 20.—N° 2596.

ERS, Horatio Nelson.—"Improvements in feed-water heaters for steam generators."

eat the water which is intended to be pumped into the steam generator to the boiling point, or nearly the exhaust steam from the engine, at the same time separating the sediment and floating impurities from. The cold water is received into a reservoir through a pipe provided with a sprinkler having a er of fine apertures or jets; the said pipe is provided with a regulating valve. The steam enters the oir through the supply pipe, and impinging upon a deflector attached to the top of the reservoir, is y deflected against the sprinkler. The end of the feed pipe leading to the pumps lies inside the oir and is turned downward, its mouth being arranged at such a height above the bottom of the oir as not to draw in the sediment. An upright pipe is fixed upon the feed pipe to admit air or when the water falls below a certain level, so that the water shall not be taken from the reservoir that level, and an overflow pipe is provided to prevent the rising of the water above the desired t.

rinted, 6*d.* Drawing.]

A.D. 1868, August 20.—N° 2597.

ERTSON, Patrick.—(*Provisional protection only.*)—"Improvements in breaks for railway poses."

is Provisional Specification describes forming an aperture or apertures from back to front of a break, gh which sand is supplied by a flexible tube from a vessel. Grooves are made in front of the , which are kept full of sand when the break is applied to the wheel.

e Specification also describes filling apertures formed in the face of a break with metals or combinaof metal, or with gutta percha, india rubber, cork, or similar material or compounds of the same.

rinted, 4*d.* No Drawings.]

A.D. 1868, August 20.—N° 2598.

LASON, Alexander.—"Improvements in purifying coal gas and obtaining ammonia from coal gas ducts."

containing ammonia, which water would be subsequently evaporated until the material was satu sulphate of ammonia; or hydrochloric or nitric acid may be use instead of sulphuric acid in ol first or second products so far as relates to its being used for coal gas water, in which case muriat or sulphate of ammonia would be produced.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 20.—Nº 2599.

HUGHES, Hesketh.—"Improvements in sewing machines and in the manufacture thereby of t " and other work with threads, cords, or wires."

The feed foot and presser foot of sewing machines are dispensed with, and the inventor employ of plates carried by an endless chain which receives intermittent motion from the usual feed motio

The plates successively take against the thread when the needle is at the upper part of its m thereby effect the feed, at the same time receiving the whole strain of the stitch, because the n down stroke lays the thread over the plate which has last acted. Sometimes an additional thread piping is used, being brought by a lever to the two sides of the needle thread alternately. In stitching pipings and the like a guide is employed having an internal support to prevent the stitch the fabric out of its round or other required shape. This guide may have a reciprocating motion. trimmings or fancy work entirely from threads, cords, or wires the needle of a chain stitch m threaded therewith, the needle, the endless chain with its plates, and the ordinary hook or looper manufacture trimming.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 20.—Nº 2600.

ENSELL, Henry Causer.—"Improvements in smelting copper and other metals and in fo " smelting copper and other metals and for other purposes, and in obtaining products from the " vapours given off during the smelting of copper and other metals."

This invention has reference to improvements on a former Patent granted to the applicant, Nº 3 and consists in passing gaseous fuel for smelting copper and other metals through tubes or conduit desired so as as to heat the gaseous fuel, and mixing with the gaseous fuel nitrous gas oxygen and at air passed through other tubes or conduits so as thereby to produce by their combustion inte the furnace. The vapours and gases from the smelting furnace are conducted to a covered space a layer or layers of peroxide of iron and baryta by which the greater part of the vapours and gases are and from thence to condensing or absorbing towers. Any uncondensed gas or vapour may then to pass through pipes or conduits containing nitrous acid gas and steam into a chamber for the ma of sulphuric acid or other product.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 21.—N° 2602.

H, **THOMAS**.—"Improvements in the apparatus to be used in brewing."

s invention consists in an arrangement whereby the pipes or tubes through which the circulating
g medium passes are brought in near proximity to each other, and that the several parts of the said
are duplicate of each other. And the application of a strainer to the orifice of the discharge pipe of
ort pan, having an extended surface that the liquid in which the hop leaves are immersed may be
y drawn therefrom, and thereby, as it were, the essence as it were contained therein shall be thoroughly
ted therefrom without the aid of ordinary mechanical pressure.

rinted, 10*d*. Drawing.]

A.D. 1868, August 21.—N° 2603.

OTT, **JOHN**.—(*Provisional protection only.*)—"Improvements in apparatus for cutting, dressing,
illing, and moulding stone and other hard substances."

ertical instrument with a cutter composed of a diamond or other hard stone, or of hardened steel, is
l to revolve rapidly on its own axis so as to bore into the stone and to traverse horizontally over the
thereby continuously boring, abrading, and cutting as it is carried forward by suitable mechanism.

r number of such instruments may be suitably arranged and combined so as to operate at different
of cutting as may be required.

inted, 4*d*. No Drawings.]

A.D. 1868, August 21.—N° 2604.

CE, **ETIENNE JOSEPH EUGÈNE**, junior.—(*A communication from Joseph Isidore Niepce (senior)*).—
r or improved safety blinkers intended for stopping skittish or runaway horses."

s invention consists of an arrangement of springs and catches placed on the inside of the blinker in
tion with an expanding and contracting hood or cap.

s mechanism is governed by a rein convenient to the driver who, if his horse proves restive or bolts, by
pulling on the rein causes the cap to unfold, come over the eyeball of the horse and blind it. On
ng the rein the mechanism refolds the cap against the inside of the blinker and the horse's sight is
ed.

inted, 1*s*. 2*d*. Drawings.]

A.D. 1868, August 21.—N° 2605.

SON, **JOHN HENRY**.—(*A communication from Henry Beaufort Sears.*)—(*Provisional protection*
—"Improvements in machinery or apparatus employed in manufacturing wheat and other grain into
r."

invention relates to a peculiar combination of apparatus employed in flour mills whereby the white-
r quality of the flour is improved, a minute subdivision of the meal accompanied by an instantaneous
g effect on the ground material is obtained, the bran is perfectly cleaned and freed from flour (thus
ing the yield of flour), and the use of special elevators for raising the meal into the "bolt" or dressing
ne is dispensed with.

ording to this invention a pipe leads from the closed casing of the millstones downwards to an
sting fan, which not only exhausts air from between the stones and causes fresh cool air to enter
h the eye of the upper stone, but extracts the meal and ground material from the millstone case.

s meal on arriving at the fan enters the casing thereof, and is immediately blown up a vertical pipe
hopper, the top of which is covered by a frame of gauze, thin calico, or other suitable permeable fabric,
the discharge spout of the same opens into the "bolt" or dressing machine. The air escapes through
uze whilst the flour and meal is deposited in the hopper and descends thence by the discharge spout
e "bolt." The gauze is disposed in corrugations so as to expose a larger permeable surface for the
of the air, and a vibrating or shaking motion is imparted to the gauze frame by the aid of a revolving
and lever arm for the purpose of shaking off any flour which may adhere to or collect upon the
ng gauze.

inted, 4*d*. No Drawings.]

A.D. 1868, August 21.—N° 2606.

UCK, **PAUL NOONCREE**.—(*Provisional protection only.*)—"Improvements in apparatus for regis-
ng the distance traversed by hackney carriages and other vehicles, applicable also for registering the
ber of revolutions made by a wheel or drum."

ts two or more way bills, shewing the exact distance the wheels of the carriage has traversed.

No. 1 way bill shews printed the entire distance traversed from start to finish. Is for the private use of the proprietor.

No. 2 way bill shews printed the exact distance traversed each journey with the licensed number of the hackney carriage thereon.

The roller of No. 2 is constructed to shift, that it may start from zero for the accomodation of each passenger.

This invention can be applied to any carriage wheel or machine wheel for the purpose of printing the number of revolutions or measurement.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 21.—N° 2607.

KNEWSTUB, Fabian James.—" Improvements in despatch boxes, partly applicable to jewel cases, " dressing cases, and other like cases or boxes."

Despatch boxes and other cases or boxes have at their upper part one or more sliding trays which may be made to slide out when the lid is raised. Below the trays in despatch boxes is a set of leaves or compartments arranged alphabetically or numerically in an inside frame which may be taken out if desired.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 21.—N° 2608.

RAMMELL, Thomas Webster.—" Improvements in rotary or centrifugal machines for acting upon air, " water, and other fluids, and communicating motive power thereby."

An improved form of machine obtained by reducing, according to certain rules, the collective transverse area of the internal ducts or passages relatively to that of the central apertures by which the air is admitted. The diminution is to be gradually made from the mouth of each duct to the vent, and at each part is to be in inverse proportion to the increase in the velocity of rotation there, the size at each part being thus adequate only to the volume of the current. The rate of diminution in each case is to be proportionate to the intended intensity of action with the machine. Also the placing of the machines in the underground workings of mines in such manner as to act both by exhaustion and compression.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 21.—N° 2609.

CLARK, Josiah Latimer.—" Improvements in apparatus for communicating between the passengers, " guards, and engine drivers of a railway train."

This Provisional Specification describes the application of a tube extending from end to end of the train containing air, which is either exhausted or compressed by means of a pump, bellows, or similar machine, worked from the axles of the tender or carriage or from some moving part of the locomotive engine. A bell or other sounding apparatus is fixed upon the engine or tender and in each of the guards' vans, and is so arranged as to sound instantly as long as the train is in motion, the power for working the said apparatus being taken from the wheels or springs or other moving parts of the train. The apparatus is, however, further arranged in such manner that whenever the vacuum or pressure is maintained by the pump or bellows the bell or sounding apparatus is silenced either by its being thrown out of gear or by the hammer being removed out of its reach.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, August 21.—N° 2610.

WALKER, Benjamin, and PFLAUM, John Frederick Augustus.—" Improvements in machinery for " rolling disc wheels and hoops or tyres."

This Provisional Specification describes machinery for rolling disc wheels and for rolling hoops or tyres, whereby both these purposes can be accomplished in one machine. Also, transmitting motion from the driving shaft of the machine to the spindles of the rolls through differential gearing.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, August 21.—N° 2611.

EVANS, Daniel.—" Improvements in the manufacture of metallic casks, cans, kegs, and cisterns, and " metal casings for bottles, barrels, and other vessels, and also in tools employed in such manufacture."

According to this Provisional Specification in order to bend plates to form a square can or vessel a square revolving mandril is employed, having rollers so arranged that when the mandril is turned round, they press and bend the iron plates around it.

ification also describes forming a can with a taper neck of one piece of metal, and the seam
is formed on the inside of the can. Casings for glass or earthenware bottles, barrels, and
also described.

s. Drawings.]

A.D. 1868, August 21.—N° 2612.

EPH.—" Improved apparatus to be employed in the construction of walls, houses, or other
"

ing a concrete building apparatus without corner pieces and parting pieces. Also constructing
r telescopic panels and telescopic cores for different widths of wall.

1*s.* 6*d.* Drawings.]

A.D. 1868, August 22.—N° 2613.

, THOMAS, and HOLDING, JOSEPH.—" Certain improvements in looms for weaving."
to the first part of our improvements the stave of the heald around which the yarn portion of
secured is constructed in a round, square, or other suitable shape that will admit of its being
tered in position, which effects (by reason of the heald yarn at the lower end being attached
uch times a slight shift or removal of the heald yarns passing through the metal or yarn
eald, thereby removing the wearing surfaces in contact with the eye over a surface equal to
that the stave is capable of being reversed to. According to the second part of our improve-
nploy but one roller formed of wood or other suitable material, from which small teeth or
t in a slanting direction, the said roller being mounted on a fixed or ridged axle, the cap
e being secured by an overlap or projecting [*ear* *] can be readily adjusted by set screws or
lent to a position that will regulate any required bearing or pressure upon the cloth relative
roller.

d. Drawing.]

A.D. 1868, August 22.—N° 2614.

UGUSTUS BRYANT.—(*Provisional protection only.*)—" Improvements in machinery for dressing
millstones."
ion relates to dressing or cutting the grinding surface of millstones with diamonds or other
substances in a more expeditious and perfect manner than has hitherto been practicable.
lress the stones with a spiral "crack" or groove extending continuously from the centre to
of the stone. To produce this spiral "dress" it is necessary that the diamond tool or
move to or from as well as around the centre of the stone. I therefore attach the tool holder
g frame or carriage, which is fitted to slide endwise upon a radial horizontal arm or bar extending
al shaft, which rotates at the centre of the stone. This sliding carriage is caused by suitable
vel endwise on the radial arm as the latter turns with the central shaft, the motions of the shaft
being so proportioned to each other as to give the required "pitch" to the spiral "dress." The
der is fixed upon a horizontal spindle or axis, and in order to accelerate the cutting of the spiral
also to prevent the fracturing or blunting of the diamond point, I give to the latter, besides
bove described, a rapid rotary motion around the said spindle or axis, such rotary motion being
the motion of the horizontal arm and imparted to the said spindle by means of belts and pulleys
ble gearing.

d. No Drawings.]

A.D. 1868, August 22.—N° 2615.

YER, WILLIAM JOHANNES, and KESSELMEYER, CHARLES AUGUSTUS. — (*Partly a*
n from Emil Hermann Nacke.)—" Improvements in governors for steam and other motive power

tion consists in connecting the governor to two vessels containing fluid, from the one to the
h the said fluid passes by means of a pipe or syphon.

4*d.* Drawings.]

A.D. 1868, August 22.—N° 2616.

FREDERICK MORITZ BERAL. — (*Provisional protection only.*) — " An improved mode of
lluminated devices and designations."

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ear" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original

The device which I design to illuminate (whether of an ornamental character or the name of a street or place, or the trade-mark or name of a firm) I form in platinum after the manner of a stencil plate, or in wire-work, or otherwise, and attach the same to a gas burner in such a manner that when the gas is lighted the platinum will become heated by the flame and present a highly illuminated surface.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 22.—N° 2617.

WATSON, John.—" Improvements in blast furnaces and in obtaining a hot blast for the same."

This invention consists, firstly, in contracting blast furnaces at one or more elevations. Secondly, in methods of heating air for blast furnaces by means of waste heat derived therefrom.

[Printed, 8*d.* Drawing.]

A.D. 1868, August 22.—N° 2618.

MORGAN, Richard Douglas.—(*Provisional protection only.*)—" A new (or improved) glove or apparatus " for facilitating swimming."

Consisting of a glove provided with webs between the fingers and between the first finger and thumb.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 22.—N° 2619.

BARBER, George Henry.—(*Provisional protection only.*)—" Improved means of preserving meat, and " in apparatus connected therewith."

Consisting of a flexible bag of india rubber or other suitable material into which the meat to be preserved is put and the air exhausted therefrom.

Also a water box in which the bags are packed when used in hot countries to prevent their being affected by heat.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 22.—N° 2620.

THOMPSON, Henry.—" Improved methods of and apparatus for 'roughing' horses."

This invention consists in the use of "roughing" pieces of steel which can be applied to horseshoes without removing the latter. The "roughing" pieces are connected by means of a connecting piece formed of malleable iron, and are furnished with chisel-edged projections which are pressed against notches cut in the inside edge of the shoe and adjusted and kept in position by nuts and screws.

[Printed, 10*d.* Drawings.]

A.D. 1868, August 22.—N° 2621.

LAKE, William Robert.—(*A communication from Daniel Rice Pratt.*)—" An improved mode of and " means for uniting the ends of railway rails."

The nature of my invention consists in the mode of applying springs or flexible or yielding substances to fish bars of railway rails. I make two plates fitting the surfaces of the rails. Bolts passed through these plates and the web of the rail are also extended through cups which contain the springs or elastic substance which is arranged to press against a nut fitted on the end of each bolt. I prefer to use springs made of vulcanized india rubber. A modification of my invention consists in making the outside fish plate so thick that the recesses in the plate may be made deep enough to receive the springs or flexible or yielding substances. The rails have longitudinal oblong holes through the neck so that expansion and contraction can take place freely through the splicing plates, such expansion or contraction being permitted by the flexible fastenings of the joint.

[Printed, 6*d.* Drawing.]

A.D. 1868, August 22.—N° 2622.

SALLITT, William Joseph.—(*Provisional protection not allowed.*)—" An improved gravitating wheel " machine or engine."

The purport of this invention is to produce motive power by the action of gravitation. For this purpose a disc drum (furnished with an inner ring is mounted upon a frame. A shaft bearing a boss slotted (say eight times, more or less) diagonally revolves within the disc drum but is placed eccentrically with the same. Within the diagonal slots referred to are bars of metal (free to slide in or out), to the outer ends of which are connected pulleys which slide between the inner ring and the periphery of the disc-drum. When in motion the leverage obtained when the bars are fully out actuates the shaft through the boss, each bar being in turn thrust or pressed in and out.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 24.—N° 2623.

ORLTON, **William**.—" Certain improvements in 'slashers,' 'tape legs,' or 'heald warpers' employed
the preparation of cotton warps."
y improvements are designed for the purpose of causing the beams to deliver their yarn at one uniform
d in order that the full length of warp on such beams will be delivered, and terminates simultaneously;
the present improvements consist in driving the whole length and number of beams together by means
pur or other equivalent gearing, the connection between each beam being effected by suitable carrier
els that will when in action simultaneously actuate the whole lot of beams and rollers in such a manner
they deliver their yarn at one uniform and regular speed, thereby causing the whole length of yarn to
and be delivered from the beams at one and the same time.

Printed, 8*d*. Drawing.]

A.D. 1868, August 24.—N° 2624.

ORGE, **Christopher**.—(*Provisional protection only.*)—" An improved artificial horizon used for
king altitudes."
make the instrument of two reservoirs or trays, one containing the supply of mercury and the other
ing for taking observations into which the mercury is supplied by a tap forming the communication
een them. The mercury reservoir has a spring air valve or stopper.
e tray used for observations is provided (when passing the mercury in and out) with a glass cap or
r, which is removed when the instrument is used and a glass disc carefully placed on the surface of the
ury, presenting a clear reflecting surface for taking observations sheltered from wind or other disturbing
t.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 24.—N° 2625.

COMBE, **George**.—" Improvements in means for removing dirt from the bottoms of boots, shoes,
d goloshes."
e object of the invention is to form cleansing surfaces to be used in place of or addition to mats and
ers of metal, and of trellice or other openwork form with sharp edges on the surfaces acted upon to
tate the removal of such dirt and its passage thereof through to the floor or other surface, or into a
or recess below.
ats thus formed are particularly applicable to out of door or exposed situations.

Printed, 10*d*. Drawing.]

A.D. 1868, August 24.—N° 2626.

HARDTT, **Albert Friedrich**.—" An improved mode or system of preparing and manuring grain
d other seeds and roots before sowing or planting."
eeds and bulbous roots are manured and covered before sowing or planting with a case, insoluble in
r, which case retains the manure in contact with the seeds, and protects them from birds, mice, and
s.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 24.—N° 2627.

DDMAN, **Alfred**.—(*Provisional protection only.*)—" Improvements in steam boiler and other furnaces,
d in apparatus connected therewith."
his invention has for its object the prevention of smoke and economising of fuel in steam boiler and
r furnaces, and consists in the employment of fire bars, which are caused to vibrate vertically at the
t end on a fulcrum situate at or near their inner ends, such vibratory motion being imparted to them by
ns of a series of tappets or wipers adjusted on a transverse revolving shaft. The several bars rest upon
nsverse bearer which takes the weight off all the tappets or wipers except those which are in the act of
g, by which arrangement the power required for driving the tappets is considerably reduced. The
ace of each fire bar is notched or corrugated, and these several notched bars are so combined and arranged
y their simple vertical movement to impel forward the fuel as fast as it is allowed to enter thereon, this
g effected by giving a slight lead to the notches or corrugations in each adjoining bar. The fuel is
lied continuously from a hopper, the front lower portion of which is caused to vibrate by the action of
bars, thereby preventing clogging of the fuel in the throat of the hopper. The front upper part of the
per is also capable of being opened back when required to remove the fuel therefrom, thus giving free
ss to the interior of the furnace. This hopper is provided with a regulating slide for adjusting the feed

of the fuel. When the fire is required to be "banked up," the tappet shaft with its tappets may be lowered by screws or otherwise so as to bring the several fire bars on to the transverse bearer hereinbefore referred to, thereby leaving the series of bars on the same level, and thus preventing unequal burning away. Motion may be imparted to the tappet shafts of any number of boilers in a row from an overhead driving shaft and suitable gearing or driving straps and pulleys. In some cases, if thought desirable, a brick arch may be built between the feeding hopper and the front of the furnace in order to expedite the ignition of the green fuel, and an inclined deflecting arch or bridge may be constructed at or near the after end of the furnace, the front of such bridge being in contact with the roof of the furnace chamber, whilst the hinder portion is rather lower so as to leave a space between the roof and the top of the arch at that part. The deflecting arch should be brought sufficiently forward to allow of the requisite area between it and the ordinary fire bridge when used.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 24.—N° 2628.

LAKE, William Robert. — (*A communication from Samuel Norris.*) — (*Provisional protection only.*)— " Improvements in cartridges for breech-loading fire-arms."

I form the base and tube of the shell solidly together instead of crimping or folding the base at the rim. In the centre of the base I form a cup or cavity by producing a rim from the solid metal. The bottom of the said cup is thinner than the other part of the base to render the cartridge more sensitive to the action of the striking pin. In this cup I place the fulminate, and I either turn the rim of the cup down upon the same to form the anvil or upon a separate metal disc fitted into the cup. The formation of the exterior rim and central cup from the solid metal of the shell and the turning down of the inner rim are effected by suitable dies and punches.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 24.—N° 2629.

SETCHELL, Oliver Cromwell.—" An improved composition applicable to the manufacture of bricks, " artificial stone, and various articles capable of being moulded or pressed into form."

Gravel, broken stone, or brick ballast to which is added Portland cement and iron filings or slag, the whole mixed with water and muriatic acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 24.—N° 2630.

TOOTH, William Henry. — (*Provisional protection only.*) — " Improvements in the manufacture of " bricks, tiles, and other articles made from plastic or siliceous materials, and in the machinery or apparatus " employed for moulding and pressing the same; part of which improvements are also applicable for " compressing peat or other substances for the manufacture of artificial fuel."

Adapting to the backing of the compressing plunger a spring, so as to allow the plunger to yield to undue pressure.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 24.—N° 2631.

COLETTE, Gustave Jules.—(*Provisional protection only.*)—" Improvements in holders or protectors " for sewing needles."

This Provisional Specification describes a holder or protector formed of two caps connected together by elastic bands. A piece of soft material is inserted in one cap to receive the point of the needle. The other cap is to cover the eye of the needle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 24.—N° 2632.

DRACOPULO, George Sinepi.—" A new apparatus for raising or forcing water, applicable to ships, " mines, and other purposes."

According to this invention the power of compressed air is applied by a pipe to a jacket surrounding a receptacle placed at the bottom of a ship or mine, from which receptacle a main tube ascends to the desired height; perforations are made in the receptacle for the inlet of water, which is then raised by the force of the air up the tube and escapes by an exit pipe.

The compressing apparatus may be worked between decks or in a cabin of a vessel, or on the surface of a mine.

[Printed, 8*d*. Drawing.]

A.D. 1868, August 24.—N° 2633.

HENRY.—" Improvements in bushing the bung holes of casks and similar vessels."
g to this Provisional Specification a bush is formed of a tube of metal having a flange at one end.
placed in a hole formed for it in the stave, and the projecting end is opened out by a plug and

10*d.* Drawing.]

A.D. 1868, August 25.—N° 2634.

, JOSHUA, and MARTIN, CHARLES.—" Improvements in the manufacture of iron for plating
d fortifications, and the fastenings connected therewith."
r refined or by preference non-refined siliceous iron is taken and combined with titanic iron in
g furnace, and afterwards piled and rolled in the ordinary manner. For bolts, bars, and other
h are subject to violent tensile strains, blooms composed of about one fourth titanic iron of good
ded with three fourths of iron of ordinary English brands, are employed.
d. No Drawings.]

A.D. 1868, August 25.—N° 2635.

N, RICHARD.—(*Provisional protection only.*)—" Improvements in dress fastenings and orna-
pendages, such as buttons, studs, clasps, brooches, eardrops, or other personal ornaments."
part of this invention has for its object improvements in the construction of buttons, studs, or
r dress fastenings which are attached to and secure the parts of the article of dress together by
ugh a button hole or eyelet formed for their reception. This part of the invention consists in
he front part or parts of a button, stud, or other similar dress fastening that after it has been
gh a button hole or eyelet the position of its front part or parts can be so altered or transformed
t it from being returned through the eyelet or opening until the front part or parts are returned
ginal position. The second part of this invention relates to the construction of dress fastenings
ntal appendages whereby the ornamental character of such articles may be transformed or the
osed so as to vary the ornamental character from time to time as may be desired according to the
y of the wearer.
d. No Drawings.]

A.D. 1868, August 25.—N° 2636.

IELD, RICHARD.—" Improvements in brick-making machinery."
lty consists in—
ination of a rotary disc having a series of moulds therein provided with plungers operated by a
a central pillar and having flanges fixed thereto forming a hopper with rollers to regulate and
o the moulds at one part or point of the disc's rotation, press and cut it into form at another, and
ms out upon a creeper or endless apron at another part or point of the rotation, thus constituting
rotary machine in the feeding, pressing, or forming and delivering the forms upon a creeper at a

s. 10*d.* Drawings.]

A.D. 1868, August 25.—N° 2637.

ARL JOHANN REINHART.—(*Provisional protection only.*)—" Improvements in apparatus for
motive power, and for registering the quantity or quantities of steam, water, or other liquid
apours, and for pumping purposes."
ntion consists in using the power of water, air, steam, or any liquid, gas, or vapour moving
exible pipe for acting as a rotary engine or for making any motive power useful to move water,
r any liquid through a flexible pipe for acting as a meter of liquids and air or gases to be used
pump.
d. No Drawings.]

A.D. 1868, August 25.—N° 2638.

GE, WILLIAM COLBORNE.—(*Provisional protection only.*)—" Improvements in apparatus for
breaking, and reducing the soil or land."
od crusher, in which the plain wheels have rims and every alternate wheel is made slightly
meter than the others.
chain harrow, with the links so arranged that they do not follow one another in the sams track.
d. No Drawings.]

A.D. 1868, August 25.—N° 2639.

COHEN, Benjamin Jacob.—" An improved appliance or apparatus for receiving memoranda, notes, or " other manuscript communications."

A slate tablet or sheet is fitted in a case or box, so that when a lock is released the slate can be slid out at one end, and then when the lock is fastened it may be pushed in, but cannot be again pulled out until the lock is again released. Thus several persons may in succession write on the slate and then push it in far enough to conceal the writing from the next person; the owner of the appliance may thus receive on the same slate communications from several persons, each of whom has not been able to see any writing but his own.

[Printed, 10*d.* Drawing.]

A.D. 1868, August 25.—N° 2640.

ADCOCK, Joseph Spencer.—(*Provisional protection only.*)—" Improvements in account books."

According to this invention the journal is a record of every transaction and constitutes a cash book, bill book, purchase and sales book, and discount book, or other books recording the transaction of the business. Suitable vertical columns and made to divide and head the accounts, and to render every transaction and series of similar transaction clear and distinct. All the entries, instead of being entered twice, as in the ordinary system and books, are only by this invention entered once, and a debit and credit transaction thereby recorded. The ledger is ruled similarly to the journal, and the headings may be the same as or different from those of the said journal.

[Printed, 4*d.* Diagram.]

A.D. 1868, August 25.—N° 2641.

BARRANS, Joseph.—(*Provisional protection only.*)—" Improved machinery or apparatus for flattening " hackle, gill comb or card pins, also the heads of needles and articles of a like nature."

This invention consists of a horizontal double cranked shaft mounted on a frame, each crank being connected to a vertical sliding bar carrying on its lower end an adjustable die, stamper, or flattener, opposite to each of which is mounted upon the frame bottom a correspondingly adjustable anvil. Motion may be imparted by means of a driving pulley on one end of the shaft, a fly wheel being on the other end. If desired hand power may be used.

As alternative means sometimes a single or duplex steam hammer for flattening, or an elve hammer may be used.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 25.—N° 2642.

LONG, John Jex.—" Improvements in reducing and cutting or dividing timber, and in the machinery or " apparatus connected therewith."

The feature of novelty which constitutes this invention is the arrangement and mode of actuating one set of knives or cutters for dividing the timber vertically and another set for cutting horizontally, so that the log of timber can be reduced into strips or splints of any desired length and thickness by the combined and simultaneous operation of the two sets of cutters.

[Printed, 2*s.* Drawings.]

A.D. 1868, August 25.—N° 2643.

GILLOTT, John, and COPLEY, Peter.—" Improvements in machinery or apparatus for cutting or " getting coal, stone, and other minerals."

This invention relates to a peculiar construction, arrangement, and combination of apparatus to be worked by any suitable prime mover for the purpose of cutting or getting coal, stone, and other minerals.

According to this invention it is proposed to employ a horizontal revolving wheel or disc having a series of cutters mounted on the periphery thereof, such cutters being made to cut outwards or from the bottom of the groove or undercut to the face of the working, whilst the body of the machine itself takes its bearing against the face in order to resist the strain of the cut. In some cases one or more quide rails may be employed in addition. The whole is mounted on a suitable carriage made sufficiently low to admit of the cutters getting well down to the bottom of the face for the purpose of " holing in " the bottom when required. The cutter wheel is rotated slowley, but powerfully, by the aid of spur, bevil, and worm gearing carried on the main framing.

[Printed, 10*d.* Drawing.]

A.D. 1868, August 25.—N° 2644.

John Henry.—(*A communication from Placide Nezeraux.*)—“ Improvements in condensing
of water and other liquids, and in the apparatus employed therein.”
g steam and other vapours by passing them through pipes kept cool by being immersed in
h which atmospheric air is blown by an air pump or otherwise, thus diminishing greatly the
vater required as the air takes up the caloric as fast as it is imparted to the refrigerating water.
condensation is collected in a closed reservoir from which it is pumped back into the boiler.
l. Drawing.]

A.D. 1868, August 25.—N° 2645.

exander Melville.—(*A communication from Paul Perret and François Deroche.*)—“ Improve-
reech-loading fire-arms, and in the mode of capping or priming the same.”
breech plug to rise up above the line of the barrel for the insertion of the charge by the aid
d hand lever lying along underneath the stock, which also serves to lower the breech plug into

ied to needle guns I produce the cocking by means of a disc on the screw above mentioned,
ıed plate connected to the needle carriers. In this case I also use an improved cap or priming,
a cork or india-rubber disc in which a fulminating cap is inserted having a small orifice at the
nicating with the charge for receiving the needle. I also provide an expanding tube for pre-
scape of gas at the breech in firing.
n is also applicable to guns using the Lefaucheux cartridge to ordinary percussion guns, or for
ıarges by simply providing a channel in the breech plug for the pin or nipple.
t the needle principle to ordinary gun locks by the simple addition of a guide on which is
e carrier and needle, so connected to the hammer as to be cocked on pulling back the same and
e aid of the trigger in firing.
. 6*d.* Drawings.]

A.D. 1868, August 25.—N° 2646.

ichard.—“ Improvements in sewing machines.”
ven over curved race by reciprocating horizontal lever actuated by excentric working within
ation of lever.
l. Drawings.]

A.D. 1868, August 25.—N° 2647.

dolph Emil.—(*A communication from Johan Christian August Bock.*)—(*Provisional protection*
rocess for the direct decomposition of neutral fatty substances for the manufacture of stearine.”
ion consists in treating neutral fatty substances with sulphuric acid and boiling them with
shing them with water repeatedly. Clean fatty acids are thus obtained yielding about 95 $^{0}/_{0}$
l producing stearine of a fine quality with a melting point of 58° to 61° celsius.
. No Drawings.]

A.D. 1868, August 26.—N° 2648.

Joseph.—(*Provisional protection only.*)—“ An improved shaft tug.”
for quick release of an animal from the shafts in the event of a fall, or otherwise, without
raps.
No Drawings.]

A.D. 1868, August 26.—N° 2649.

amuel.—“ Improvements in self-acting mules for spinning and doubling.”
tion relates to the winding on motion of mules, and it consists in dispensing with the usual
l parts acting in combination therewith, and employing in lieu thereof a break acting on a
tin drum shaft; also in taking the rim band over a grooved pulley on a shaft driven by a strap
om the usual driving apparatus.
l. Drawing.]

A.D. 1868, August 26.—N° 2650.

hn.—(*Provisional protection only.*)—“ Certain improvements in looms for weaving.”
y of the invention consists in constructing in an intermediate position between the shuttle
as a central or third shuttle box open at both ends and supplied with picking stick and stop

motion, the said arrangement of intermediate shuttle box being employed for the purpose of enabling two separate and distinct fabrics of cloth to be manufactured in one width of reed space at one and the same time.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 26.—N° 2651.

HALL, William.—" Improvements in rotary engines to be worked by steam or other fluid, and which are " also applicable to be used in raising or forcing fluids."

The improvements relate to rotary engines such as that for which Letters Patent were granted dated the 4th January 1864, No. 18, and consist,—

Firstly, in forming the centre of the main shaft so that the outer diameter only of the piston comes in contact with the interior of the cylinder when the packing of the piston is passing the edge of the abutment slide.

Second, in forming the main shaft at the part where the piston of the engine is keyed on to it eccentrically to the other parts of such shaft to admit of the outer diameter of the piston being applied further from the centre of the main shaft in case it should at any time be found necessary to rebore the cylinder.

Third, in forming the brasses or other bearings for the main shaft conical on their outside in order that the correct position of the main shaft may be more readily maintained.

Fourth, in the employment of metallic rings in the piston, one the width of the opening, the others V formed and acted on by springs.

Fifth, when reversing in dispensing with steam ports in the abutment slide and admitting the steam on either side thereof, the reversal being effected by a D valve.

The longitudinal packing strip in the piston is formed sufficiently wide on one side to close a port of the abutment slide before the other opens to the exhaust.

[Printed, 10*d.* Drawing.]

A.D. 1868, August 26.—N° 2652.

MORGAN, Richard Walker.—(*Letters Patent void for want of Final Specification.*)—" An improved " machine for mowing and reaping."

This invention has for its object improvements in mowing and reaping machines, and consists in making the face or front edge of the " breast or finger bar," and turned up so as to form a bed upon and against which the knives rest and cut and which imparts greatly increased strength and rigidity to the " finger bar." Also in making the " fingers " or guards of malleable iron with a steel cutting edge and without the usual cross or shoulder, and also in making the " tilting or delivery board " partly close sheeted and partly skeleton.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 26.—N° 2653.

HOUGHTON, William.—(*Provisional protection only.*)—" Improvements in looms for weaving."

The novelty consists in—

Having the weft fork bar to slide in or through a fixed bracket or bearing.

[Printed, 4*d.* No Drawings.]

A.D. 1868, August 26.—N° 2654.

WILLIAMS, William Lawrence. — (*Provisional protection only.*) — " An improved motive-power " engine."

A motive power engine constructed according to my invention is composed of the following principal parts :—A cylinder formed with ports and fitted with a piston and piston rod and a valve or valves of any ordinary kind ; a fly wheel and a pin or stud to connect the piston rod to the fly wheel, the whole being carried or supported on strong framework.

These parts however are arranged or combined and made to operate in an entirely novel manner. Instead of the cylinder being stationary or made to oscillate it is suspended on centres formed on opposite sides thereof and caused to rotate thereon. The axial line of the said centres is at a distance from the axis of the fly wheel equal to one half the length of the stroke of the piston in the cylinder. When therefore steam or other elastic fluid is supplied to the cylinder both it and the fly wheel rotate on their respective centres, the cylinder making a double stroke over the piston each revolution. The valves are of any ordinary kind. I prefer, however, as means for regulating the ingress and exhaust of the steam or other fluid a circular valve piece, surrounding one of the centres or bearings of the cylinder, formed with inlet and exhaust ports, the back being of large area so as to keep the valve up to its face under every condition.

ray rotary motion is obtained without the mechanism necessary to convert reciprocatory into
›n. It will be obvious motion is taken from the fly wheel or from a pulley or gearing attached
› the shaft thereof.

d. No Drawings.]

A.D. 1868, August 26.—N° 2655.

, **Ernest.**—(*Provisional protection only.*)—"Improvements in means for rendering certain
›f windows and doors or doorways air and water tight."

ntion is designed to prevent the passage of water or air under doors and windows or between the
indows. To the sill of the door or window is fastened a metal guard which holds a strip of
having a groove in one side. To the lower part of the door or of the window sash a bar or
ding is fixed having a projecting edge which enters the groove in the caoutchouc when the door
s shut and thus makes a tight joint. The junction between two window sashes may be similarly
the said metal bar being fixed to one sash and the metal shield with the caoutchouc to the

d. No Drawings.]

A.D. 1868, August 26.—N° 2656.

, **Samuel Rodgers**, and **BIRKS, John.**—"Improvements in the manufacture of woven
nd in apparatus employed therein."

g to this Provisional Specification the warp threads of the fabrics are carried in warp bars as in a
e; they are shedded by the warp bars, and a loop of weft being passed through the shed it is
a bobbin thread thrown through it. The weft carriers may be needle like instruments carried by
having the weft passing through their eyes, or they may be shuttle like instruments thrown
sheds and having eyes through which the wefts are threaded. These weft carriers are propelled
by an arrangement which is also applicable to other looms.

3*s.* Drawings.]

A.D. 1868, August 26.—N° 2657.

John.—"Improvements in breech-loading fire-arms."

g to this Provisional Specification the striker of a breech loading fire arm is formed with a pro-
s hinder end which is acted upon by a slot in the inside of the hammer to throw it forward and
cartridge.

sm for showing when the barrel is loaded, and which consists of a slide, is also described.
arrangement for working the locking bolt from the fore part of the trigger guard.

10*d.* Drawing.]

A.D. 1868, August 27.—N° 2658.

Arnold.—(*Provisional protection only.*)—"Certain improvements in boilers or generators for

lty of the invention consists in constructing a chamber behind the boiler in the flue and supplying
pers through which the draught from the boiler is caused, first, to go in a direct course to the
nd then when the fire has burnt up through another passage in which is contained a chamber
ith fire bricks, this said chamber being employed for the purpose of heating air, which is passed
re over the dead plate each time the furnace is nearly replenished with coal, by which means the
ing from the fresh fuel are thoroughly consumed.

4*d.* No Drawings.]

A.D. 1868, August 27.—N° 2659.

Y, **Thomas.**—"Certain improvements in furnaces applicable to boilers for generating steam or
rposes."

elty of the invention consists in constructing the furnaces of steam boilers in a step like form, that
f bars one below another, each set having an independent forward and backward motion given
eans of eccentrics and rods or other equivalent that causes the fuel or coal placed in a hopper in
boiler to fall on to the highest or first set of bars which is taken forward and pushed along by the
furnace as such bars move, thereby gradually taking the coal as it is consumed from the front
e "bridge" of the furnace.

, 10*d.* Drawing.]

A.D. 1868, August 27.—N° 2660.

JACKSON, William Maxwell, and GARSIDES, Robert.—" Improvements in roofing tiles, and in " the method of keying or fastening together some of such tiles when being formed into a roof, and in the " apparatus used in the manufacture of such tiles."

A flat roofing tile with raised sides, grooved, and a half pipe to key the tiles together, the requisite dies and apparatus employed in their manufacture.

[Printed, 10*d*. Drawings.]

A.D. 1868, August 27.—N° 2661.

PEYTON, Edward.—" Improvements in metallic bedsteads."

Firstly. The legs or supports of metallic bedsteads are placed at a suitable distance from the ends of the frames, by which means greater rigidity and strength are obtained with the minimum of material.

Secondly. The frames are formed of separate and distinct strips or bars of metal joined by bolts, screws, or diagonal or transverse strips or bars of metal.

Thirdly. A recess or core is formed in the interior of the casting instead of having projections on the exterior thereof. In the said core or recess the male portion of a dovetail joint is caused to rest.

Fourthly. Two or more dovetail joints may be placed one above another, greater firmness being attained thereby.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 27.—N° 2662.

HÉBERT, Louis Pierre, MOULIN, Louis Armand, COUINCK, Jean Prudent, the elder, and COUINCK, Edmond, the younger.—(*Provisional protection only.*)—" An improved press for stamping " letters, books, and documents with ink or other coloring matter."

The principal feature of novelty in this invention consists in mounting the die holder on an axis, and causing the pressure on the stamp to present the two sides thereof, holding each a die, to the action of an inking arrangement placed at the upper side of the die holder, the die holder being turned half round by the rising of a spring handle each time the pressure on the stamp is removed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 27.—N° 2663.

SMITH, Dillwyn.—" Improvements in smoke-consuming apparatus."

My improved apparatus is so constructed that it can be readily adapted to a furnace of any size, and can be applied to the furnace of a steam engine or other furnace of a factory or workshop without disturbing the structure or without hindering the work carried on in such factory. Two horizontal bars each in one or more pieces are made to rest upon the existing dead plates which support the ordinary furnace-bars. These two bars are made rather deeper than such furnace-bars, and extend the entire length of the furnace. The said horizontal bars support a number of cross-bars formed and arranged with apertures or spaces between them for the admission of air, or these cross-bars may be made hollow to admit the air through them. The bars are made of any suitable shape, but I prefer to make them of a triangular or V-form, with feet resting upon the two horizontal bars. Inside these cross-bars on each of the sloping sides I prefer to arrange perforated plates. These plates are preferably formed of two sheets or plates of sheet iron perforated with small holes fixed on a frame with a space between them. The said plates extend from end to end of the series of cross-bars, and prevent any danger of displacing the said bars in raking the fire or introducing fuel into the furnace. To ensure a more perfect uniformity in the supply of air to all parts of the furnace I provide the apparatus with draw plates, which are fitted to slide in grooves or upon shoulders extending lengthwise along the interior surfaces of the vertical part of the longitudinal bars, and are formed at the end with flanges, whereby the mouth of the ashpit may be entirely closed if desired. I prefer to employ three of these plates arranged one below the other, and of different lengths, so as to admit air to different parts of the furnace. In applying my improved apparatus to a furnace I have only to remove a few of the fire-bars from the grate and place my apparatus in the space previously occupied by such bars.

[Printed, 2*s*. Drawings.]

A.D. 1868, August 28.—N° 2664.

BURROWS, Benjamin, senior.—" Improvements in machinery or apparatus to facilitate the separation " and division of skeins of silk preparatory to winding."

In separating skeins of silk so as to divide them into two or more smaller skeins, considerable difficulty experienced by the means heretofore employed for this purpose when the silk is very fine and of low ality and much charged with "dressing" or foreign matter to impart weight thereto.

Now the object of this invention is so to arrange machinery or apparatus that skeins of silk (more rticularly of the above description) may be readily opened, separated, and divided into smaller skeins, the ndition of the silk being rendered much more suitable for winding so that children may be employed to perintend the winding on to bobbins or otherwise in place of more experienced hands. Considerable ne is also saved and much waste avoided by means of these improvements.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, August 28.—N° 2665.

OLMES, Nathaniel John.—"Improvements in electric telegraphs, and apparatus connected therewith."

My improvements consist in the combining together of certain parts and principles in a specific manner, as to constitute when so combined a new and modified form of the step by step apparatus employed in sending and receiving of telegraphic signs or signals through metallic conductors between any two or re places. In this modified form of step by step letter showing telegraphs the communicator in its ion is simply that of a mechanical generator of magneto currents; it has no complication of parts or eties of adjustment, neither is there any necessity for the insulation of currents or circuits through the aratus. It may therefore be placed in the hands of the most ordinary manipulators without risk or fear derangement.

[Printed, 6*d*. No Drawings.]

A.D. 1868, August 28.—N° 2666.

LE, John.—(*Provisional protection only.*)—"Improvements in arrangements and apparatus for dealing ith sewage."

he main features of the invention are the employment of compressed air (alone or in combination with austion) for transferring the sewage from closed receptacles into which the dwelling-house soil pipes harge, thence into closed tank carts; and the furnishing of such tank carts or accessory carts with airps driven by horse gear for compressing or exhausting the air employed.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 28.—N° 2667.

ANG, William.—"Improvements in arrangements and apparatus for dealing with sewage."

he arrangements and apparatus are designed to effect the separation of the liquid from the more solid tituents, and may be applied with equal convenience either to a single watercloset or to a discharge from a number of waterclosets. The arrangement and form of the apparatus are susceptible of iderable variation, but an essential feature of all modifications is the providing of a vessel at the bottom e soil pipe with separate outlets for the liquids and solids combined with the interposing therein of a ing or separating medium through which the liquids can pass, but which keeps back the solids. The ng or separating medium is by preference applied in an inclined, vertical, or overlying position, so that olids tend by their greater gravity to fall away from it into a deeper part of the vessel, in which deeper he outlet for them is situated. The liquids have access to their outlet through the separating medium and the sewage accumulates in the vessel and in the pipe leading down to it until it has a sufficient to force the liquids through.

rinted, 1*s*. 2*d*. Drawings.]

A.D. 1868, August 28.—N° 2668.

, George.—"Improved mechanism or apparatus for cleaning gloves and other articles and fabrics."

nsisting of revolving cylindrecal brushes mounted on spindles geared together through which the es to be cleaned are passed; also of rollers geared together through which the articles are passed to the operation.

rinted, 1*s*. 4*d*. Drawings.]

A.D. 1868, August 28.—N° 2669.

DERSON, Thomas.—(*Provisional protection only.*)—"Improvements in sewing machines."

e feature of novelty which constitutes this invention is the arrangement of the needle bar in a guide h oscillates in a centre fixed to the frame of the machine so as to produce what is known as the rring-bone" stitch.

rinted, 4*d*. No Drawings.]

SAUNDERS, ROBERT.—" An oscillating screen breakwater."

My invention relates to floating breakwaters to form harbours of refuge, as well as to facilitate on exposed shores from boats or otherwise.

I moor a number of tubes of metal to form the backbone to carry screens of wood or other m may be suspended from the floating portion of the structure to any required depth towards the b object being to arrest the force of the surge.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 28.—N° 2672.

McGREGOR, WILLIAM.—(*Provisional protection only.*)—" Improvements in the construction of " and signal posts."

I construct tubular metal telegraph and signal posts in sections of suitable length for conv transportation, which sections are screwed or otherwise fitted one on the other. The sections whe nected are introduced the one in the other, the whole being packed in the bottom and largest secti is provided with a flange top and bottom for fixing in the ground.

I support posts of great height by means of chain stays having tightening screws.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 28.—N° 2673.

GARDNER, CHARLES HENRY.—" Improvements in lithographic and zincographic cylinder " machines."

The object of this invention is to ensure accuracy of lay and register in printing.

For this purpose an appliance is fitted on the feed table near to the gripper; it consists of a carrying arms or plates made adjustable at required distances apart on the bar or rod by screws or Two or more such arms are provided with bits, ends, or plates adjusted preferably by screws an regulate and register the margin of the sheet while being printed. They or the arms may be The bar or rod has a rocking or rising and falling motion, which is best effected by mounting on it arms, one carrying a friction roller working against the cylinder and the other being actuated or by a cord. The ends of the adjustable arms rise to allow the sheet to be taken by the gripper. is sometimes used consisting of a bar or rod carrying arms, teeth, or tines, decreased in thicknes the working end and formed with holes through which the bar or rod is passed and adjusted, and in place by screws.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 29.—N° 2674.

RICHARDSON, EDWARD.—" A new (or improved) material for manufacturing casings or cov " bottles and other such like articles, applicable also for other purposes."

The novelty consists in the manufacture of spent hops, paper pulp, paper, either alone or in co with glue, horn, or size, with treacle and certain alkaline or other chemical substances for covering o covering bottles or earthenware vessels. Some of these materials are to be made into sheets, slabs, m ornaments, or vessels, or for containing liquids and serving as drinking cups.

ching agents. The fabrics or fibres are contained in a closed kier or other vessel, and the superheated m is admitted to the kier after the fabrics or fibres have been partially prepared by the action of water, er with or without chloride of lime or other bleaching agents.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 29.—N° 2676.

RTIN, JAMES.—(*Provisional protection only.*)—" Improvements in extracting pitch or similar articles om wool or similar materials."

he inventor mixes with boiling water the following ingredients:—Coal, naptha, lime, oil, & any kind of li, and steeps the wool in the mixture, when the pitch will float on the surface ready for use.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 29.—N° 2677.

DGE, WILLIAM EDWARD.—(*A communication from James Salamon, Victor Freteur, and Casimir quier.*)—(*Provisional protection only.*)—" An improved machine for agglomerating coal or other comustible dust in any shapes, particularly into spheroidal and ellipsoidal forms, and permitting the simulaneous manufacture of balls or cakes of various sizes."

his improved machine agglomerates coal dust and all other analogous combustible material. It is based he principle of pressure by wedges applied in a rotary manner.

series of pistons are set facing each other on the circumference of two plates or tables, the head of each on being hollowed to one half of the shape of the ball or cake of fuel to be made. The tables being made evolve, the material to be agglomerated is raised into a hopper, from whence it passes into openings in tables in which slide the pistons, their bottom ends pressing against sloping rails which bring two osite piston heads gradually closer until they meet, compressing the material to be agglomerated between n; they then retire from each other while a driver strikes the ball or cake which thus freed passes down nclined plane and is removed for storage.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 29.—N° 2678.

TERSALL, JOB, TATTERSALL, THOMAS, and RICHMOND, THOMAS.—(*Provisional protection*)—" Improvements in machinery or apparatus employed for grinding 'cards' used in the preparation cotton, wool, and other fibrous substances."

is invention relates to apparatus for moving the card roller when being ground to or from the grinding r by means of racks on which the supports of the said card roller rest. The racks are worked by pinion cross shaft by hand wheel, hand wheel "scroll" and "skew" pinion on said shaft, or worms (chilled) be employed for working supports of card roller actuated by chain wheel and chain. The necks of the ngs of the card roller are adjusted by means of screws.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 29.—N° 2679.

KSON, EPHRAIM, and OGDEN, JOHN.—(*Provisional protection only.*)—" Certain improvements in echanism or apparatus to be employed for preparing cotton and other fibrous substances."

e novelty of the invention consists in forming the guides, through which the combined attenuated rs of cotton pass after leaving the drawing rollers, in drawing frames on one end of a balance lever, the site end of which is provided with a sliding adjustable balance weight and stop that is elevated out of way of a vibrating rod so long as the slivers are passing through the guides, but in the event of one of slivers breaking, the trumpet guide is relieved from pressure, the effect of which is to lower the stop on balance lever, which prevent the advance of the vibrating rod connected to the stop motion, thereby ping the frame.

Printed, 4*d*. No Drawings.]

A.D. 1868, August 29.—N° 2680.

NTER, JOHN MORRISON.—" Improved apparatus for effecting aerial propulsion."

tted in an egg-shaped vessel provided with vertical and horizontal screw elevators and propellers is a lar generator and furnace for generating permanent combustible gases. The gases forming with n explosive mixture are used as a motive power for sustaining the vessel in and propelling it through air.

Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, August 29.—N° 2681.

PARAIRE, Edward Louis.—(*Provisional protection only.*)—" An improvement in the mode of working " steam engines."

The chief object of this invention is to increase the effective power of steam engines of all kinds. To this end I introduce compressed air or other gaseous element within the working cylinders of steam engines and avail myself of the heat of the steam when partially exhausted to develop the expansive properties of the air or gas and increase the propulsive force in the rear of the pistons of such engines.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 29.—N° 2682.

NAYLOR, William.—(*Provisional protection only.*)—" Improvements in railway breaks, and in apparatus " connected therewith."

This invention relates to means or apparatus for applying nearly simultaneously any number of breaks to carriages, wagons, or any other description of railway vehicles which may be denominated a set of continuous breaks, and consists of weighted levers suspended by a rope or chain passing under or along each vehicle, over fixed pullies, and under pullies attached to the weighted brake levers, which weights being lifted, suspended, or lowered act by the force of their gravity through levers or other well known and suitable means and connections upon the brake blocks, thereby forcing them against the periphery of the wheels of the carriages. A second weighted lever may be employed in connection with the lever above described for the purpose of adding to the power when the brake is put into action. As the distance between the vehicles composing a train varies as the draw springs are distended or the buffing springs are compressed, or where a varying length of coupling chains connecting the vehicles together is used I propose to counteract these variations by two or more bars and a connecting piece or pieces carrying a pulley or pullies under which the rope or chain passes from vehicle to vehicle. These bars in their normal condition are bent down to an angle of about 45 degrees, and as any two carriages approach nearer together the bars become more bent down through their joints and pins, and draw the rope or chain with them, thereby suspending the levers at very nearly the same level, so that they are when required ready for being lowered one after another in rapid succession, and either a portion or the entire series connected together. Gravity is the only force that is applied in putting the brakes on, and its action is certain and almost instantaneous. The weighted levers are raised and the brakes withdrawn from the wheels by hauling in the chain or rope at one or both ends until all are lifted.

This may be done by the guard working a capstan or windlass of sufficient multiplying power, or by a small steam engine in connection with the boiler of the locomotive, or by steam power direct from the piston, or by water pressure acting against a piston or ram, which by a series of pullies moving a proportionate short distance draw the single line of rope or chain. The water pressure may be obtained by the use of a pump worked by an eccentric on one of the axles of the vehicle carrying the guard or brakesman. The pump can be worked through the medium of a slotted link. To one end is attached the eccentric rod; to the other end a radiating rod but without movement. When the eccentric rod end of the link is moved to the pump it is put to work, and when the necessary force has been attained a pressure guage moves the slotted link so as to bring the still end of the link to the pump and it ceases to work. As a reservoir of power an accumulator may be employed, and in case the brakes should be down and the accumulator exhausted, by which there would be no means of putting the ordinary pump to work; a pump worked by hand may be employed for the purpose. Another part of my invention consists in having a weighted lever break as the last vehicle of a goods, cattle, fish, coal, or mineral train, or any train of that character. The weighted lever to be attached to the preceding vehicle, and so as to be lifted and the breaks free from the wheels before the ordinary draw gear comes into operation. With such a break attached to a portion of a goods train any tendency of such train to move backwards will put the break fully on, as it is self acting, and that whether the guard or brakesman be attending to it or not. In case of its being necessary for the train to move backwards, such as shunting into a siding, the guard may have a means of suspending the break during that operation by a chock between the buffers, so preventing their coming near together. In connection with this arrangement a second lever may be employed in the manner described with reference to the first part of my invention.

A further part of my invention consists in having a steam cylinder and piston through its rod attached to one end of a lever of the first order, the other end of such lever being attached to the end of the tender brake lever. The steam power may be so regulated by a pressure gauge as to be equal to the maximum power of the stoker with the ordinary means in present use.

om any accident there should not be any steam in the engine by which this brake may be rrangement may be adopted for enabling the stoker to screw down the break as at present. ay exerted almost instantaneously, as time in preventing collision is of great importance.

l. No Drawings.]

A.D. 1868, August 29.—N° 2683.

romwell Fleetwood.—" Improvements in electric telegraphs."

sional Specification describes improvements in electric telegraphs.

ea cables the insulated conductor is laid side by side and parallel with a cord or cords and lashed hereto. The cords or ropes are made of hemp, jute, or other suitable fibre, combining great little or no weight in water.

e the hemp or other vegetable fibre used in these and other telegraphic cables or ropes it is first h strong brine or chloride of sodium, and dried (wholly or partially); it is then covered with a tch and chloride of sodium well mixed.

gainst the teredo or other boring insects of the warm oceans, the outer covering of the insulator fine glass powder or other hard material detrimental to the teeth of the marine animals.

l. Drawing.]

A.D. 1868, August 31.—N° 2684.

, William Sanderson.—" A new method of and apparatus for preventing draughts of air mission of rain through the apertures under and around doors and windows of all descriptions."

on consists in the application of strips of india rubber or other elastic material, which are held l clips secured to the door and window frames or to the doors and windows. The india rubber rial is wider than the clip, and forms a cushion or elastic pad which effectually closes the und the doors and windows, thereby preventing the passage of air or water.

d. Drawing.]

A.D. 1868, August 31.—N° 2685.

Samuel.—(*Provisional protection only.*)—" An improved swing door hinge."

or fixes to the floor or upper part of the frame a box having a square recess with a stationary ntre, and places in the box and over the pin a spiral spring. Into the recess is inserted a block, n the spring and has at the top a **V** shaped groove with rounded tops. A corresponding male on the bottom or top of the door, the said **V** sliding in the **V** groove when the door is being sed.

l. No Drawings.]

A.D. 1868, August 31.—N° 2686.

OD, Josiah.—" Certain improvements in looms for weaving."

y of the invention consists in preventing the rebound of shuttles when entering the shuttle box a strap embracing the spindle and picker, which passes through slots formed in an upright lever, ressure outward from the box given to it by means of a spring, such outward pressure giving a e strap that deadens the concussion and prevents the rebound of the shuttle.

l. Drawing.]

A.D. 1868, August 31.—N° 2687.

homas, and TRUEMAN, William.—" Improvements in steam engines."

of this invention refers to a previous Patent, No. 183, 1865, granted to Thomas Lester, and aking the cams or tappets used for working the slide valve rod act against antifriction rollers lide valve rod instead of against fixed studs, as described in the said Patent No. 183, 1865.

rt consists in connecting with the condensers of steam engines two pumps worked alternately nk shaft for the purpose of rapidly and uniformly clearing the condenser of waste steam and air, obtaining a very perfect vacuum on the vacuum side of the piston.

d. Drawing.]

A.D. 1868, August 31.—N° 2688.

ISE, John.—" Improvements in the furnaces of steam boilers."

tion consists in applying to Cornish boilers or boilers provided with internal flues a second or e grate, on which a small fire is maintained. This additional fire grate is situated underneat the bottom of the front end of the boiler. The smoke and products of combustion from the fuel on the ordinary grate in the internal flue, after passing along the internal flue and back again along the sides of the exterior of the boiler, pass over the fire on the additional grate, by which the smoke is consumed or partly consumed. The heated air and products of combustion finally pass along the bottom of the boiler to the stack.

By this arrangement the smoke is consumed or partly consumed, and the bottom of the boiler effectually heated.

[Printed, 1*s*. Drawings.]

A.D. 1868, August 31.—N° 2689.

WALKER, Henry.—" An improved method for papering and packing needles, pins, and similar small " articles for sale."

To put up stuck needles, pins, and similar small articles with a label or printing across that portion of the material on which they are stuck, which is raised.

Or to use a band for the same object of printing, so as to designate the name of maker, place of manufacture, trade mark, or other design.

To put several folds of these stuck needles into a book shape in manner described.

And making synoptical cases with many folds.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 31.—N° 2690.

WILKINSON, John, the younger.—" Improved machinery for printing carpets."

The carpet fabric is carried forward continuously by means of an endless travelling cloth provided with points or pins on its surface. The carpet passes under a set of printing rollers mounted in stationary frames.

[Printed, 10*d*. Drawing.]

A.D. 1868, August 31.—N° 2691.

LAKE, William Robert. — (*A communication from W. H. Shock.*) — (*Provisional protection only.*)— " An improved relieving coupling for wire rigging."

The said coupling consists essentially of a cylinder or box containing india rubber cushions and a sliding rod which passes through the said cushions and the end of the cylinder. The latter is secured to any suitable support, and the rod is connected to the wire rope. When any strain is produced upon the rigging the elastic cushions are compressed between the head of the rod and the end of the cylinder, and allow the rod to move in the cylinder, and thus prevent injury to the wire ropes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 31.—N° 2692.

LAKE, William Robert.—(*A communication from W. H. Shock.*)—(*Provisional protection only.*)— " Improvements in projectiles for ordnance and fire-arms."

The chief object of my invention is to obviate the necessity of rifling the gun. For this purpose I form the rear end of the projectile with spiral grooves and shoulders, which are arranged in combination with air passages extending towards the front end of the said projectile. When the latter is expelled from the gun the air rushing through these passages impinges against the spiral shoulders and gives to the projectile the required axial rotation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, August 31.—N° 2693.

GEDGE, William Edward.—(*A communication from Jean François Vaugeois.*)—(*Provisional protection only.*)—" An improved apparatus for warding off leaves and other matters likely to clog the working of " turbines."

This invention consists in placing on an axle in front of a turbine a cylinder covered with a grating or wire gauze and provided with paddle blades.

The water passes through the grating, strikes the paddle blades, the cylinder rotates on its axle, and the leaves and foreign matters arrested by the grating are thown off into a channel which carries them clear of the turbine.

[Printed, 6*d*. Drawing.]

A.D. 1868, August 31.—N° 2694.

THOMPSON, Nathan.—(*Provisional protection only.*)—" Improvements in cutting nippers."

This Provisional Specification describes constructing nippers with the cutting edges close to the pivot and es as far as possible from it, thus obtaining the greatest amount of leverage in any given length of

ting pieces are applied to strengthen the hinge.
d, 4*d*. No Drawings.]

A.D. 1868, August 31.—N° 2695.

E, Louis Foy Amour Poniatowsky.—" Improvements in cases for packing bottles containing
other liquid."
ing to this Provisional Specification there are partitions at each end of the box with holes to
e bottoms of the bottles, and in the centre a partition made in parts and dropping into guides.
ral partition has holes for the necks of the bottles; it is divided to allow of the insertion of the

d, 8*d*. Drawing.]

A.D. 1868, September 1.—N° 2696.

, John Cowdery.—" Improvements in the treatment of cartilaginous matter of bone for the
cture of gelatine, which improvements are also applicable to the treatment of other substances
hich gelatine is manufactured."
g the cartilaginous matters of bone or bone from which the earthy phosphates have been dissolved
acid with successive solutions of lime, or lime and caustic soda weak to commence with and
in strength, alternating with washings producing a white, strong, and tenacious jelly.
reating the cartilage after being sufficiently limed with a salt of aluminium or such salt in
ion with sulphurous acid, producing a transparent and light coloured gelatine.
ove process is also applicable to the treatment of hide pieces or skin cuttings from which gelatine
made.
d, 4*d*. No Drawings.]

A.D. 1868, September 1.—N° 2697.

R, John, and BADGER, William.—(*Provisional protection only.*)—" Improvements in steam
s."
vention consists in improvements in the construction of governors and expansion gear, and in the
packing pistons.
vernor balls are placed upon a horizontal arm which is attached to a vertical spindle, the balls
nnected by means of links to a slider on the spindle. A beam is attached to the slider for the
of working the valve which regulates the admission of steam to the cylinder, the beam moving
slider as the latter is raised by the centrifugal motion of the balls. A compound valve forming
st and steam valve in one is constructed by placing a small cylinder upon the ordinary gridiron
steam ports terminating in annular or other spaces in the cylinder, which is fitted with a cylindrical
ked by a lever and expansion link suspended from the end of the before mentioned beam.
rrangement for packing the piston consists in the use of a conical plug by which an eccentric
ing is expanded, and which can be screwed down through a hole in the cylinder cover without
the latter. The piston ring has grooves for the collection of water which lubricates the cylinder.
d, 6*d*. Drawing.]

A.D. 1868, September 1.—N° 2698.

Y, Joseph.—(*Provisional protection only.*)—" Improvements in machinery or apparatus for spinning
isting wool or other fibrous substances."
velty consists,—
, in driving spindles by friction so as to be enabled to stop or prevent rotation of any one separately
rest of said spindles.
lly, in producing the traverse motion of the yarn guides by gearing or friction so arranged that
nay be broken with any spindle at any time and thus prevent rotation.
d, 4*d*. No Drawings.]

A.D. 1868, September 1.—N° 2699.

N, Frederic.—(*Provisional protection only.*)—" Improvements in dry gas or liquid meters."
vention relates to an improved diaphragm consisting of a central disc surrounded by outer discs
to leather so that it is allowed to work freely backwards and forwards, and by this application of

combining the outer discs with the central disc a perfect shape is maintained at each vibration which perfects the registration of the meter, as the well known defect of the present system of meter is in having a great amount of loose leather which cannot fail to deviate in shape or form as the diaphragm vibrates it can be applied to every kind of dry meter, water or liquid meter.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 1.—N° 2700.

HOLMES, William Cartwright.—(*A communication from Benjamin Warnes Thurston.*)—" Improvements in apparatus used in the manufacture of gas."

This invention consists in combining within one apparatus an arrangement for washing, scrubbing, and condensing gas, processes which are usually carried on in separate apparatus.

The arrangement is composed of three chambers, the first or lower one fitted with trays over which water flows, the second or upper and inner one filled with coke, breeze, or other material through which water also trickles, and the third or upper and outer one in which the gas is condensed by the cooling power of the atmosphere and the water which passes through the scrubber.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 1.—N° 2701.

TOMS, Thomas. — (*Provisional protection only.*) — " Improvements in waterproof shooting and walking " boots."

The features of novelty are,—

1st. Requiring no lace, buttons, or elastic.

2nd. The boot is made waterproof, seamless, and without lining.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 1.—N° 2702.

DOLBY, Thomas George Fonnereau.—" Improvements in the application and construction of valves " made of india-rubber or other similarly elastic material."

This invention claims for novelty the forming of a bevilled valve of india rubber or other elastic material suitable for the general purposes of a valve, for ingress or egress of gasses or fluids.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 1.—N° 2703.

JOBSON, Edward.—" Improvements in pianofortes."

The feature of novelty which constitutes this invention is the covering of the hammers with velvet or other piled fabric, whereby they are rendered more durable and capable of producing a finer tone than hitherto.

[Printed, 6*d.* Drawing.]

A.D. 1868, September 1.—N° 2704.

LAKE, William Robert.—(*A communication from George Crompton.*)—" Improvements in looms for " weaving."

My invention relates to the construction and arrangement of the hooked jacks and lifters and depressors for operating the harness levers from the pattern chain or cylinders of fancy looms. The said invention consists, first, in combining with long upright harness levers and suitable lifter depressor and evener mechanism, jacks pivotted thereto and arranged horizontally, and having hooks or notches upon their opposite edges, which hooks or notches engage with the lifter and depressor mechanism. The said invention also consists in so constructing and arranging harness jacks that they rest directly upon or against the pattern chain or cylinder so as to be distributed by the said chain or cylinder without the intervention of intermediate mechanism. Also in the employment of a yielding lifter bar for raising the jacks, the said bar being so constructed and arranged that it will yield to any undue strain of the pins of the pattern cylinder caused by their accidental projection too far from the peripheral surface of the cylinder, and in operating the warp of a fancy loom by means of hooks, one attached to each extremity of the connections from the harness, and seizing either hook by the movement of a bar or bars in either direction, to raise and depress the harness as may be determined by the contour of the pattern chain, and retiring the said hooks to their normal condition by the return of the evener bar or bars, the hooks being attached to the said connections in such manner as to produce a bias on the chain.

[Printed, 2*s.* 6*d.* Drawings.]

A.D. 1868, September 1.—Nº 2705.

William Wilson.—(*Provisional protection only.*)—" An improvement in glass furnaces."
ace constructed with hearth after the manner of a puddling furnace, and of "fire-stone" in
brick.

d. No Drawings.]

A.D. 1868, September 2.—Nº 2706.

LLE, Henri Adrien.—(*A communication from Alphonse Louvel.*)—" A new and improved
r regenerating certain alimentary substances, and improvements in apparatus connected
"

tion relates to the regenerating of alimentary substances by means of a void or vacuum operated
preferably made of ribbed sheet-iron.

. No Drawings.]

A.D. 1868, September 2.—Nº 2707.

John Henry.—(*Provisional protection only.*)—" Improvements in the construction of insulators
ph wires."

tion consists in constructing the insulators of iron covered with a non-conducting enamel or
reference that invented by Camille Baroness de Lavenant, and for which Letters Patent were
ichard Archibald Brooman as her agent, dated the 2nd day of July 1863, No. 1646.

. No Drawings.]

A.D. 1868, September 2.—Nº 2708.

hn, and BARRETT, Henry.—" An improved stopper for bottles for containing aërated or
quids."

oved stopper consists of a cylinder or plug of hard heavy wood or other like material provided
rubber washer. The cylinder is hollowed out above the washer to allow space for the washer
hen the stopper is forced into the neck of the bottle.

d. Drawing.]

A.D. 1868, September 2.—Nº 2709.

, Edward.—(*A communication from Casimir de Forel.*)—" A new system of suspended iron
ays, and carriages or vehicles to be used in connection therewith."

tion consists in an arrangement of aerial or above-ground iron road or way suspended from
d points of support, the bodies of the carriages or vehicles being hung or suspended beneath the
arried by the wheels which run on the iron road or way.

. Drawings.]

A.D. 1868, September 2.—Nº 2710.

, Clinton Edgcumbe.—(*A communication from Joseph Fraenkel.*)—(*Provisional protection*
improved process for purifying or treating wool."

is cleansed in a bath of salt of soda, urine and fuller's earth; then washed in water to remove
tters dissolved by the salt of soda; next immersed for about 4 hours in a bath of water and
d, then dried at about 100° to 125° Fahrenheit; next beaten to remove the destroyed vegetable
n immersed and agitated for an hour or more in a bath of chalk or other material of alkaline
alize or eliminate the sulphuric acid; or instead of the chalk bath the wool is submitted to an
nical agent in the state of vapor or in a volatilized state.

d. No Drawings.]

A.D. 1868, September 2.—Nº 2711.

enry.—(*Provisional protection only.*)—" Improvements in treating grain, pulse, hay, straw, and
for the purpose of speedily drying and bringing the same into sound condition, and in the means
therefor."

e of novelty which constitutes this invention is the storing of grain, cereals, hay, straw, or root
a manner that currents of air, gas, or steam can be forced or drawn through them to dry and
apidly into good condition.

. No Drawings.]

A.D. 1868, September 2.—N° 2712.

CARLE, JOHANNES FRIEDRICH CHRISTIAN.—" Improvements in breech-loading needle guns, and in the " cartridges to be used therewith or with other needle guns."

The chief features of novelty in this invention are,—

The peculiar construction of chamber for receiving the cartridge, and in which the lock or breech piece slides, and which has an annular groove.

The combined lock and lever with its peculiar arrangement for cocking, and two projections forming with the annular groove herein before alluded to a stop for the lock.

A safety spring applied for the purpose of preventing needle from acting until lock is in position.

The fixing of the needle on a V piece to fit a V groove so that it can instantaneously be removed and replaced.

The combination of these features in one gun.

And the making of the cartridges of double material throughout, and the use of pressed pieces of paper or other material at ignition end of cartridge so as to leave space to allow of compression from accidental cause without risk of explosion.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 2.—N° 2713.

EVANS, JAMES.—" Improvements in machinery for finishing and welding iron and steel tubes."

This invention refers to the employment of suitable dies arranged so as to close around the tube whilst being drawn and securely finish and weld it. The invention applies to tapering as well as parallel tubes.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 2.—N° 2714.

CAMPBELL, JOHN IRVING.—(*A communication from Theodore Kleinknecht.*)—" Improvements in securing " bales of cotton and other material and in wrappers therefor."

According to this Provisional Specification strengthening bands are woven in with the material of the wrapper, and these bands are fastened together on each side of the bale by a spear, mesh, hooks, toggles, clips, or a lacing or in other convenient manner.

Or the strengthening material may be distributed over the whole surface of the wrapper.

Or such bands may be applied independently of the wrapper fabric.

[Printed, 8*d*. Drawings.]

A.D. 1868, September 2.—N° 2715.

FORSTER, THOMAS, and HEARTFIELD, JOHN.—" Improvements in the manufacture of porous or " spongy substances from india-rubber, gutta percha, balata, or their compounds."

These improvements consist in combining with india rubber, gutta percha, balata, or their compounds ground animal or vegetable fibre, together with water or other liquid or substance which will generate vapour in the curing process; or in some cases charcoal or other absorbent material may be used in place of fibre.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 3.—N° 2716.

GREEN, WILLIAM CHARLES.—" Improvements in breech-loading fire-arms."

I fix a striker to slide in line with the axis of the barrel in the breech piece in a guide formed by the tail piece. This striker is acted on by a hammer mounted on a fulcrum in the trigger plate, said hammer with which is combined the tumbler projecting up through a slot formed in the striker.

A lever forming the trigger guard is mounted on a fulcrum in the trigger plate in front of the hammer, the upper end of which lever comes in contact with the hammer and moves it back together with the striker for cocking the gun on the trigger guard being lowered. A projecting catch on the under side of the barrel engages with the end of a sliding bolt in the breech piece for locking the barrel, the rear end of which bolt also engages with the upper end of the lever forming the trigger guard, by which it is operated for unlocking the barrel at the same time that the gun is cocked. By partially rotating a transverse pin in the breech the striker will be arrested and so prevent the accidental discharge of the gun.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, September 3.—N° 2717.

NEWMANN, JULIUS.—(*Provisional protection only.*)—" Improvements in fans known as Chinese fans."

This invention consists in making those Chinese fans which when folded are enclosed in a tube to come out and unfold in a self acting manner by means of two helical springs placed within the tube or tubes, the fan being refolded and re-entered by pulling a cord.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 3.—N° 2718.

PRESTON, **Francis**, and **ROSS**, **Robert Craib**.—" Improvements in stop blocks for railways."

Our improvements consist in placing the stop block between the ends of the rails; the stop block rocks on a centre so as to bring the stop upwards or to move it to one side for the portion corresponding to the rail to be upwards; or the stop block may be moved longitudinally to and fro or up and down by a lever or other equivalent, and the stop blocks may be applied to one or both lines of rails; in the latter case they may be united by a connecting rod and worked by a single lever.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, September 3.—N° 2719.

KIRK, **Alexander Carnegie**.—(*A communication from John Kyle.*)—(*Provisional protection only.*)—" Improvements in packing and storing ice and in apparatus therefor."

This invention has for its object the packing or storing of ice in such a manner as to occupy small space and present very little surface for waste; and it consists in compressing a number of separate pieces of the ice together into a solid block by means of hydraulic or other suitable pressing apparatus, such compression rendering the ice solid and compact. The ice is to be compressed in moulds into blocks of any suitable form, which blocks may then be very conveniently arranged in ice houses or ice boxes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 3.—N° 2720.

GRIFFITHS, **John**.—" A new or improved method or methods of and apparatus for uprooting or de-" foresting trees, roots, and other matters."

This invention consists in certain methods of applying tackle for uprooting trees, roots, and other matters, to which motion is given by a winch, driven by steam, horse, or hand power; or where the power is applied directly without the use of a winch, and this in combination with a roller or rollers placed at or near the stock or root of the tree or other article to be raised.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 3.—N° 2721.

CLARK, **Alexander Melville**.—(*A communication from Charles Joseph Everickx.*)—" An improved " portable or camp bedstead and travelling trunk combined."

The trunk is formed of two capacities, the lower one for holding the clothes or other articles, and the upper one or lid containing the bedstead. The bedstead consists of two frames each composed of three parts jointed together. Canvas sacking is stretched between these frames by means of cords to support the bedding. Each frame is hinged to a support fixed to the trunk, legs jointed to the frames and resting on the ground being provided at each end for their support. When not in use the whole may be doubled up into the lid or upper capacity above mentioned, the body of the trunk forming the principal support for the bedstead when opened out. Uprights may be fixed to the box for supporting a tent if desired. The bedstead may be transformed into a litter when required by the addition of a hinged shaft on either side attached to the legs at each end and supporting the bedstead in the middle, by means of which it may be detached from the box for transporting any person from place to place.

[Printed, 2*s*. Drawings.]

A.D. 1868, September 3.—N° 2722.

PARKER, **Edward Lawley**.—" Improvements in fastenings for braces, belts, bands, and other like " articles."

This invention consists essentially of two metallic plates hinged or jointed together, between which the brace (or belt or band) is held by means of teeth on one plate pressing it against a bar on the other plate. The two plates are fixed together by means of a hook or stud near the lower edge of the back plate, passing through a hole in the front plate, a plate or ring carrying the tabs of the brace being engaged with the stud or hooked on the hook on the said back plate. To adjust the length of the brace or band the tab plate or ring is disengaged from the stud or unhooked from the hook on the back plate, when the front plate may be raised so as to release the brace or band, and the latter may then be adjusted.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 4.—N° 2723.

ATHERTON, THOMAS, and ATHERTON, JOHN.—(*Provisional protection only.*)—" Improvements in " looms for weaving."

This invention consists in improved apparatus for holding the break from the fly wheel when the loom is worked for a short time by hand, and for removing the break when the loom is started.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 4.—N° 2724.

GRAFTON, SIDNEY.—" Improvements in machinery or apparatus for cutting or slicing cucumbers and " other substances."

This invention consists essentially of a fluted or corrugated hollow cylindrical case open at both ends, in which case a travelling plate or holder works, by which the cucumber or other article is held while being cut or sliced. A screw situated in one of the flutes of the case passes through a screw box on the plate or holder; by turning the said screw motion may be given to the travelling plate or holder. On the ends of the screw and outside the ends of the case are knives or cutters, by giving a rotatory motion to one or other of which the cucumber or other article fixed in the plate or holder described is advanced from the open end of the case at which the knife or cutter is situated and cut or sliced by the said knife or cutter.

The screw and holder may be dispensed with and an open frame used in which the articles are placed, the knife or cutter being jointed to the side of the open frame.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 4.—N° 2725.

JOHNSON, JOHN HENRY.—(*A communication from Pierre Blumer Zweifel.*)—(*Provisional protection only.*)—" Improvements in the preparation of a blue color from aniline."

This invention relates to the production of a blue color from aniline, and consists in the employment for such purpose of aniline or salts of aniline in conjunction with an oxidizing agent, such, for example, as chlorate of potash, together with an acid such as hydrochloric or tartaric acid.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 4.—N° 2726:

WHITE, GEORGE.—(*A communication from Josef Popper.*)—(*Provisional protection only.*)—" Improvements " in apparatuses for preventing incrustations from collecting on the sides, flues, or tubes of steam or other " boilers."

The invention consists in providing the interior of steam or other boilers as well as their flues with a suitable lining or linings of sheet metal, leaving a suitable distance between these latter and the inner surface of the boiler or the outer surface of the flues, or in causing sheet metal plates to be applied in a slanting tangential manner against and between the tubes of tubular boilers for the purpose of procuring a suitable motion to be imparted, by the effect of the evolved steam, to the water of the boiler whilst the incrustating matters subside on a layer of pebbles or other heavy materials provided in the lower part of the lining or of the outer covering of tubular boilers.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 4.—N° 2727.

BUTTERWORTH, THOMAS.—" An improved pump suitable for lubricating and for other purposes."

The pump consists of an ordinary barrel and plunger, but instead of the usual valves a revolving tap or valve is used.

This tap is furnished with three branches, one being connected to the suction pipe, one to the pump barrel, and one to the delivery pipe, and the tap has a passage arranged in such a manner that as it revolves it will open a communication alternately between the suction pipe and pump barrel and between the delivery pipe and pump barrel.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 4.—N° 2728.

JONES, DAVID.—" A new or improved stand or support for umbrellas, parasols, sticks, and other " articles."

This invention consists in the construction of stands for holding and supporting umbrellas, parasols, walking sticks, and other articles in the following manner:—Each umbrella or other article is held and supported by a tube, which may be of any shape; the tube is placed in an angular position for the purpose of throwing the article supported in a backward direction. The tubes or supports are fitted into a body acting as a reservoir with outlets for emptying the water. A rail is attached to the body to keep damp umbrellas or parasols from touching walls or articles placed near.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 4.—N° 2729.

LAFORGUE, Adolphe Marie Albin.—" A new apparatus for introducing powders into natural or " pathological cavities in the human body."

The apparatus consists of a handle, either hollow or solid, at the end of which is a bag made of a suitable thin flexible material constructed of two valves separated by a plane, the two valves being connected by a seam of two fine wires or threads joined at the top.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 4.—N° 2730.

TRAVIS, Charles, **CHADWICK**, James, and **LAW**, Joseph.—(*Provisional protection only.*)—" Certain " improvements in condensers of carding engines."

We propose to fix thin flat guides between the doffers and the strippers ; these guides are placed between the rings on the doffers with the flat side towards the doffer; by this means the slivers are more effectually separated. We also place two rollers (fluted or plain) between the stripper and the twisting straps to take the slivers from the stripper and carry them to the twisting straps; we also place guides between these rollers and the twisting straps for the slivers to pass between; by these means there are less breakages and better work produced.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 4.—N° 2731.

COOPER, William Giles, and **HARRISON**, Robert.—(*Provisional protection only.*)—" Improvements " in looms for weaving."

The invention consists, firstly, in the use of pulleys and a weight attached to the ordinary "weight" on the weight lever with a rod and cross piece pressing against the yarn on the beam, as the yarn is wound off the weight is released and the slides on the weight lever, thus adjusting the weight without attention on part of the operative.

Secondly, in the use of a cam on tappet shaft actuating a "parallel rod," this working a catch lever and catches, which by means of gear wheels actuate the cloth roller and take up the cloth.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 4.—N° 2732.

SPROUL, Joseph.—(*Provisional protection not allowed.*)—" An improved system of water power."

This invention consists in working machinery by water power. The water to be pumped up from a tank under the wheel, the pump being worked as part of the machinery of the water wheel, the supply of water being rendered inexhaustible by reason of the water that works the wheel being made to run back to the tank from whence it is pumped.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 4.—N° 2733.

NEWTON, William Edward.—(*A communication from Jean Baptiste Napoleon Fournier and Charles Armand Lemaire.*)—" Improvements in thermometers."

At the back of an ordinary thermometer is placed a metal rod which is acted upon by the temperature, and by its expansion and contraction actuates an index or needle which oscillates before a divided sector and between two metal blocks connected with a battery, so that when the index comes against either block it closes the electric circuit and brings into action a signalling apparatus.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 4.—N° 2734.

PARKER, James.—(*Provisional protection only.*)—" Further improvements in apparatus for obtaining " motive power for engines by means of a combination of steam and air, for the prevention of racing in " steam and air marine engines, for a condenser applicable to steam and air engines, and for other " purposes."

One novelty consists of an improved apparatus for reheating or superheating steam and air for user in lieu of steam as a motive power for engines, and by using the steam and air slightly superheated the racing of marine steam and air engines in a sea way is prevented. Another novelty is the apparatus for supplying the boiler with hot feed water by utilizing for this purpose the heat of the exhaust steam and air, and this in conjunction with or separate from a further novelty, namely, a new condensing apparatus applicable for the steam and air engine. Another novelty is a slide arranged for clearing the jet apparatus from lime or other obstructions. The last novelty is a more simple arrangement of jets and nozzles by which the correct action of each jet and nozzle is obtained.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 4.—N° 2735.

SHARROCK, Samuel.—" Improvements in metallic standards or posts for electric telegraphs and signal " masts."

This invention consists of improvements in metallic standards or posts for electric telegraphs and signal masts.

The central upright is made of iron or steel in convenient lengths, all fitted together and of the tubular form, the lengths being attached by means of flanges which only require bolting or rivetting together so as to give a minimum amount of trouble in putting them together and by means of the rudest labour at the place of erection. In the case of telegraph masts, as well as the signal masts where considerable height is required, the central uprights are trussed or braced by means of iron or steel truss rods which are tightened and adjusted by means of stretching screws.

The standards or masts are also braced from the upper end to screw moorings by means of iron or steel rods or wire rope and stretching screws.

I provide an iron or steel ladder in the case of lofty standards for ascending to the top to fix the insulators or wires.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, September 4.—N° 2736.

PERKINS, Thomas.—(*Provisional protection only.*)—" Improvements in elevators or apparatus to raise " agricultural produce on to carts or stacks."

This Provisional Specification describes combining a small steam or motive power engine with an elevator so as to render it independent of external driving mechanism.

Also an elevator to be drawn or pushed in front of a cart or waggon. Rake teeth pass under the crop as it lays on the ground; it rises up these and is taken by an endless chain of teeth which carry it up to the required height and drop it into the cart or waggon. The elevator is provided with castor wheels so that it may steer readily, and in some cases an endless band of teeth or a toothed roller is placed over the inclined rake teeth at the front of the apparatus to help the crop up there.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 5.—N° 2737.

PICKERING, Jonathan.—" Improvements in apparatus for raising and lowering weights."

My invention relates to improvements in apparatus for raising and lowering weights. Two pulley wheels are made of unequal diameter, the smallest wheel has sunken chambers to receive the links of a chain. One end of this chain is secured to the frame work of pulley block, the chain hanging down on one side to raise weights, but when used for raising and lowering those two wheels are separated and grooved or bevel faced between, so that they may be held together by friction by means of a clutch, which wedges the wheels together; a ratchet wheel is used to prevent the weights slipping down. The largest wheel is also made with sunken chambers to receive the links of an endless chain. The motion is obtained by pulling the endless chain on one side; the lifting wheel is thus secured against a collar on the spindle and the grooved faces; when lowering is required the other side of the endless chain is pulled, which loosens the whole to run down as desired.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 5.—N° 2738.

BANKS, Richard.—(*Provisional protection only.*)—" An improved floor dog or cramp."

The novelty consists in,—

Fastening to the joist or support of flooring boards a frame fitted with a rack and pinion. The rack being worked by the pinion pinches the said flooring boards or other articles into their proper position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 5.—N° 2739.

HOWCROFT, Thomas, and **McGREGOR**, Alexander.—(*Provisional protection only.*)—"Certain "improvements in agricultural implements known as reaping and mowing machines."

The novelty of the invention consists, first, in enclosing the gearing of agricultural implements in a dome-shaped cover, the gearing being connected so as to communicate such to the knife or cutter bar by means of a "cannon" or tube projecting from the dome or case enclosing the gearing, the said gearing being so contrived that motion is readily and conveniently imparted from the traction wheel or wheels of the machine through the medium of a clutch box. Secondly, in adapting a detachable collar or packing to one of the axles upon which the framing of the machine rests inside the wheels. By the adaptation of this collar or packing to either side of the framing between the boss of the wheel and the frame upon the axle. The machine can be used as a reaping or mowing machine. Thirdly, in constructing and supporting a shaft giving motion to the knife, being in a direction at right angles to the axle of the wheels of the machine, the said driving shaft being so constructed and arranged that motion is imparted to the cutters through the medium of chain gear or other equivalent that will enable the carriage of the machine and the reaping or mowing cutters to have an independent motion from each other when passing over the inequalities of the ground.

Lastly, in adapting an arrangement of cam motion to such before mentioned gearing that will enable the machine to be employed when desired for raking or gathering, the arms of the rake being placed and supported by the transverse shaft of the machine, the throwing off and raking motion of the arm being obtained through their connections with the cam before mentioned.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 5.—N° 2740.

PULVERMACHER, Isac Louis.—"Improvements in apparatus or means for producing and applying "electric currents."

Chain batteries are constructed as follows:—Openworked copper cylinders receive hollow or solid zinc cylinders, threads being interposed between the two metals; insulated bent pins connect the copper cylinders into a chain and put the copper cylinders into metallic contact with the zinc. The zinc and copper cylinders have movable rings with projections so placed that by moving the rings into one position all the copper cylinders and all the zinc cylinders are in contact, whereby electrical quantity is obtained; and by moving them into another position each zinc cylinder is in contact with the copper of the adjoining element, whereby voltaic contact and intensity are obtained. The supply of the exciting liquid is kept up through a caoutchouc tube, which carries T pipes fitting over the zinc cylinders.

Boxes for exciting chain batteries are made of hardened rubber, with an arrangement for holding the chain in a zig-zag or like position on the under side of the lid, the lid being lowered to cause the chain to descend into the box, and then raised and held up by mechanical appliances.

Wet conductors for applying electricity to the human frame are made by attaching metallic thread to one side of garments, such as drawers worn next the skin, and connecting the ends of the thread to a conducting wire. That side of the garments to which the thread is attached is covered with a waterproof material. These garments are wetted before being applied.

Galvanic batteries are formed by attaching zinc wires parallel to the metallic thread, and by establishing voltaic contact.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 5.—N° 2741.

SLOPER, Joseph.—(*Provisional protection only.*)—"Improved means of and apparatus for perforating, "punching, cutting, or stamping cardboard, metal, and other materials, and especially applicable to perforating railway tickets."

Combination of hanging or vibrating frame with forcing rod made by vibration to act against cam; or
od may carry cam. Friction rollers may be introduced or cam roller to obtain quick release from pressure.
otion of rod to actuate tools. Resistance obtained by plate or block carried by vibrating frame or otherwise
esented. Also is included making die or resistance plate or block to move towards forcing rod by or from
otion of rod itself. "Vibration" may be from a centre at top or bottom, or otherwise placed; or apparatus
ay be in duplicate, one part working on a top centre, the other on a bottom centre.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 5.—N° 2742.

CRISPIN, William Henry.—" Improvements in the manufacture of artificial fuel."

The fuel is formed by combining about one ton of coal in a pulverised state, about six or seven of stearine pitch, cotton seed oil pitch, or other analogous vegetable pitch (the same having been dissolved in about an equal weight of "dead" or "heavy" oil or other hydro-carbon fluid or flui three per cent of lime, and about three per cent. of common salt, a small quantity of common s state of brine being sometimes added.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 5.—N° 2743.

NEWTON, William Edward.—(*A communication from Demetrius Bittle Strouse.*)—" Improv " mariners' compasses."

The aberrations of the compass needle caused by local influence are counteracted by a battery adjustable intermediate connecting battery.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 5.—N° 2744.

WILSON, Thomas.—" Improvements in breech-loading fire-arms."

One part of this invention consists in jointing to the trigger guard at the rear of the trigge plate or flap which can be made to bear or abut against the trigger and prevent its movemen accidental discharge of the gun.

Another part consists in making the foot or upper end of the trigger bear firmly upon the top guide spring for preventing the movement of the spring while the plate or flap hereinbefore d resting against the trigger.

Another part consists in making the extractors of fire arms having sliding bolts to work in a lo groove or opening in the rear and upper side of the breech shoe, and operating the extractor by th of the breech bolt in opening and closing the breech.

Another part consists in constructing breech loading fire arms as follows:—The breech fram is provided with openings at top and bottom, and to the rear end a tongue or breech piece is which the pin or striker is fitted. A hollow cylindrical bolt or hammer working in a tube or fr rear of the breech shoe drives forward the pin or striker described. The hammer is held in its cocke by a sear, and is thrust backwards by a jointed rod or strap which is alternately depressed and the opening and closing of the breech. A lever operates the tongue or breech piece and ham extractors are operated upon by vertical tappets sliding in grooves in the inner sides of the breech said tappets being depressed by the lever herein before described.

[Printed, 10*d*. Drawings.]

A.D. 1868, September 5.—N° 2745.

TATLOCK, William, and ABELSETH, Christopher Nicolay. — (*A communication fr Stratton.*)—(*Provisional protection only.*)—" Improvements in apparatus for manufacturing gas."

Our invention relates to the production of gas from naptha or other volatile liquids, and the nat said invention consists in the peculiar construction of the gas generator through which a continuou of atmospheric air is forced, all of such air being brought into contact with the liquid with which the is charged and thereby impregnated with the inflammable matter contained in the same. The contained in a tank in which are arranged two revolving perforated cylinders, one within the other, between them cotton or other suitable material. These cylinders are mounted on a hollow perforat Air is forced through this shaft into the inner cylinder, and as the cylinders rotate passes through th which is saturated with the liquid. The air thus absorbs the inflammable vapor of the said liquid, combined air and vapor are then conducted to suitable burners and consumed in the ordinary mann

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 7.—N° 2746.

COWING, Henry. — (*Provisional protection only.*)—" A steam land locomotive traction engine " attachments, which make it a uneversal machine for agriculture and other purposes, which atta " are applicable to horse or ox power as well as steam and may be called a steam plough and machin " work."

My invention consists of constructing a steam land locomotive traction engine so that it can be ap all draft purposees.

can scarsely be pronunced a sucess is that they will not perform near all the

as possable in its applycations, and the different instruments or atachments
kable to horse or oxe powere is case of a failiour or axedent in the steam
heels, which enables me to travel over rugh surplises and cultivate growing
to throw my speall into power and power into steall, so that I can go
slide down when the wheals of the machine are locked or nearly,
le, which may be to two wheals or four and the stearing wheale
more power to one side then the other to focilitate the turning
se pumps, by which it fills its own tenders, or can be
for any purpose, or as a fire engine to extinguish fires;
he engine is used or atached, for extracting stumps or
ds, or for raising any heavey weights or applying to any
the different implyments off the ground for the purpose of
to another by raising them on a projecting frame. The imply-

up land fron two inchees to two feet deep. Brakes it up at different
ng the subsoil emediatly to the surface in the most pirfect maner.
d pulverizing I apply a gang of plows that braks it up at different deapths and
ile.
ation that plows, sows as if broadcast, and cover the seed all one deapth, and any deapth
preses the land all at one operation.
n, the next implyment will plant potatose, coton seed, or corn, by simply taking out any amount of
any of these seads can be planted in hills or in drills with or without fertilizers covered any deapth
ресed down all at one operation.
ne, corn, or coton can be cultivated at any hight by this same gang of plows by simply changing the
on of the plows.
great desideratom of this implement: it digs and pulverisees, plows, sows, plants, harrows, and presses
ile down all at one operation, so that the soile is not exposed to the drought, as it is at the present
. The same implyment will cover caine or lower the stuble, so that it will last for any length of time
ut replanting.
h, I atach a reaping or mowing machine or flax-puller or cane cuter which takes the crop or cut
on to an endless belt and from thince into a drying chaimber, where it is sufficiently dried befor it gose
e cart to be drawn imediatly to the stack or barn. The graine or hay is dried by heated air, heated
escape heat and stam drivin through it by a blower. I cuting sugar caine it cuts and loads at same
time. For a steam boat to run on land or water a jointed boat is applied to the engine, and the hind
f the bote is atached to the hind axletree, and the frunt part to the frunt axle or the wheel fraims.
heels runing lower then the bote, and having foulding padel wheels which can be thrown out when
into the water, and and folded up when come out of the water; these wheels foulds inside of the
eries so that should the wheals strike the botom in shallow water it travels on the botom as on dry
so that pleasure steam carrigies can be built to trovel on land or by water, for the party could get in
carrige some distance from water, and not get out of there carrige till they return, as the carrige
run down any reasonable incline into the water, and as soon as it is deap anough to flote the
the folding padel wheels propell the boat, and in coming ashore the wheels strike the shore first and
propeled by traction.
fish by steam. To the machine is fixed a groved wheel, and is driven by a belt from any of the shafts
machine, or otherwise, into which wheale runs an endless line into the water, so that one side of the
coming loaded and the other going out, so that one man may attend to even hundreds of hooks, or
e may be atached to pulleys fastined to bouys, have a tendency to keep apart by being towed by the
. The bouys may be superseeded by botes.
pplying this sistom stationary, the pullies being anckered out any distance and in any deapth of water
the ice. And it inobels person by having his fishing house at or near the water, to set or stand by
and fish by day or by night; a large saine can be taking out by the same line, and drown in with-
ng out of said house. And the fish drown into a trap without hondeling or going into the water by
tom.
war purposies it is a steam air battry. I atach to britch loading air cannon so that no powder is neaded
qualities to recomond them are little or no report, little of any concesion, no heating, and no
they are charged with ease, spead, and safety. The effacacy of the air gun has allready been tested

and dimonstrated: that compressed air is a much more powerful agent then gunpowder. And with my applyanceses, all of which will more fully appere in my Spacifications, and will be made to drive projectils to a much greater distance: adapted to hunting wild beasts in the Endies, &c.

This simple combination makes this invention most desirable in the East and Wist Indis, and other hot countrees, for by this araingmint a gentelman's residence, publick buildings, resorts, &c. can be kept at any tempreture from freasing point up at any season of the year, which would be ixclent for hospitels, baricks, &c., and ice be manufactored for a trifle by compresed air being robed of its heat and introduced at the top of the building, the could air being heavest would sink and cole every room in the house whare it could find access. By carring this sistom out on a large scaile it can be made to raine at any season of the year and n any county, which would be a great desideratom.

By this simple araingment fresh meet can be shiped to any part of the woreld by land or water. As the same machine that freasees it would keep it frozen for any length of time. My pumps being worked by the elbo leaver which is most beautifully adapted to compresing air, the punps being in coniction with the boiler, so that the heat that is generated by compresing the air is thrown into the boiler and generates or hekps to generate the steam to or more pumps may be used the air passing from the larger to the smaller to be compresed, &c., oll of which will appear in my full Spacifications.

The two great causees or drowbacks which prevent the presperity of the West Indees and simeler colonees is the difficulty of geting there caine cut and curing there magess, besides the enormes outlay to make a fine article, and a costly engine doing nothing only in grind season.

This machine and its atachments reamedy all these eavels, as the machine will cut the cane in the daytime and grind and evaperate the juice at night; take the wet magess from the mill into the drying chambers, and goes into the fire at any digree of dryness, and will both grind the the caine and evaperate the juice and have magess to spare, economising nine thinths of emunel labour both in the field and in the sugar house. This will add prosprity to the colonees, consequently at home.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 7.—N° 2747.

WOOD, Joseph.—" Improvements in ' frog plates ' for the intersections of rail road tracks."

This invention is for supplying a continuous rail at the intersection of the bars of a side track or switch with the main track, instead of the grooves heretofore used. Two short bars curved at one end and jointed at the other end to the approaching diverging bars are employed. These short bars are firmly united by a bolt passing loosely through the tongue so that the flange of a wheel coming between the tongue and one of the bars moves the same away from the tongue, and the other bar is drawn up on the other side of the tongue to make a continuous rail for the wheel to run upon.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 7.—N° 2748.

BROOMAN, Clinton Edgcumbe.—(*A communication from Hippolyte Leplay and Jules Noel.*)—(*Provisional protection only.*)—" Improvements in apparatus or means for feeding and burning mineral oils " and essences for lighting purposes."

This invention comprises, first, a particular system or mode of feeding burners in lighting apparatus with mineral oils or essences; and, secondly, a particular system or arrangement of circular burner for the combustion of the oils and essences.

The system of feeding the lighting apparatus is based on the capillarity obtained by a main or first conducting wick extending for any length and fitted horizontally in a straight or bent tube, on which the burners are placed; the ends or other part of this wick dip into a chamber containing the essence or oil so that by its capillarity the wick becomes impregnated with it for its whole length. From each burner a vertical wick leads to the main wick, and thereby also becomes impregnated by capillarity with the essence or oil. The keeping at a constant level of the liquid in the chamber into which the ends of the main wick dip is obtained by a reservoir or bottle-like receptacle with a valve placed over each chamber. The burner employed is preferably circular; it is composed of several concentric tubes with an inverted circulation of air; its wick is fixed, and the regulation of the light is effected by a movable glass carrier.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 7.—N° 2749.

LEE, Henry Michael.—" Improvement in cases employed to contain visiting or address cards."

This invention relates to modifications in the construction and proportions of card cases by means of hich they become applicable to be worn on the person as articles of jewellery. The said cases are made less size than is usual, and of gold, silver, wood, leather, or other suitable metal or material, and ornamented ith chasing, enamelling, precious stones, or in any suitable manner; and are fitted to be worn as brooches, racelets, buckles, pendants to watch chains, or are otherwise fitted to be worn as ornaments. They are metimes fitted with a tablet and pencil, and with a spring or springs to push up the cards so as to admit eir easy withdrawal. They are also sometimes fitted to contain miniature portraits, or are fitted with a cess or box to contain "aromatic vinegar," perfumes, or other like substances.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 7.—N° 2750.

ASSELON, Ursen Adrien.—" Improvements in kilns for burning bricks, lime, pottery, and other articles or matters."

For this purpose the kiln is constructed by preference of a rectangular form with an arched roof, two or ore furnaces being provided; and in the centre of the kiln and at each side thereof are arranged dwarf alls running from front to back thereof, such dwarf walls being inclined and slightly higher at the ends e remotest from the furnaces.

Upon these dwarf walls are arranged the bricks or other articles or matters to a suitable height, and then arch is turned therewith in such manner that the heat and products of combustion may pass from one end the other of such arches. The kiln is then completely filled with the bricks or other articles or matters d the man hole through which such articles or matters have been introduced is closed in any suitable anner. The heated products of combustion pass away by suitable flues.

Spaces are left in the walls of the kiln with passages communicating between such spaces and the exterior the kiln.

The furnaces employed are constructed with two grates, fuel being supplied to such grates through the me door, and a tube or passage being employed to supply air to the second grate.

The second or supplemental grate being employed only when commencing to burn a kiln full of bricks or her articles or matters, and until such matters or articles are thoroughly dried; I then stop up the outer d of the tube or passage supplying air to the second grate; the second grate is then stopped, and the main ate only is employed.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 7.—N° 2751.

YNSON, Joseph.—(*Provisional protection only.*)—" Certain improvements in that portion of ladies' wearing apparel termed 'muffs.'"

The novelty of the invention consists in forming or constructing a ladies' "muff" with projecting ears gauntlets that will form a protection to the wrists, and also providing a hole or orifice in a portion of the muff," through which an umbrella handle can be held or retained, enabling thereby the wearer to have the ll advantage of the muff and at the same time protect herself from the inclemency of the weather by the e of an umbrella.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 7.—N° 2752.

AVIES, George.—(*A communication from Eduard Schröder and Julius Cohn.*)—" An improved meter for water or other incompressible fluid."

This improved meter consists mainly of two cylinders, which serve as measures of capacity, and two istributing cylinders, all placed in juxtaposition and parallel to each other beneath a crank shaft, by means which the four connecting rods for working the pistons and distributing valves are actuated.

The measuring cylinders are closed at top and bottom, and are provided with water tight pistons, the rods which work through stuffing boxes in the cylinder cover. The distributing cylinders are bored throughut, and are longer than the measuring cylinders. Their rods are each provided with four disc valves or up leathers, the outer ones of which serve to close the ends of the cylinders, and the inner ones enclose a pace about equal in length to the measuring cylinders, and their overlapping edges serve to open and close he parts which communicate between the distributing cylinders and the top and bottom of the measuring ylinders. The valve rods are jointed directly by means of pins to their respective connecting rods; but the iston rods of the measuring cylinders are allowed a certain amount of play whilst the cranks are passing heir dead points (so as to allow for the incompressibility of the water by providing the lower ends of their rked connecting rods with a cross piece, which plays between two collars fixed on the piston rod. The ranks are arranged at right angles to each other.

The supply pipe is provided with passages entering the distributing cylinders in the space at top and bottom between the two inner disc valves, and the discharge pipe is provided with similar passages leading from the distributing cylinders in the spaces at top and bottom between the inner and outer disc valves.

A worm on the crank shaft gives motion to any ordinary registering or indicating apparatus.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 7.—N° 2753.

CARRINGTON, WILLIAM THOMAS.—" Improvements in capstans."

This invention consists in preventing the surging or shifting of ropes on capstans by forming upon the same two or more circular grooves acting in combination with one or more similar grooves on an auxilliary drum, whereby the rope is always led on to one and the same groove of the capstan.

It is also proposed to make only one deep V groove on the barrel, which shall hold the rope with sufficient foree for the purchase required.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, September 7.—N° 2754.

WANOSTROCHT, VINCENT.—(*Provisional protection only.*)—" Improvements in the construction of " gunpowder mills, and in machinery used in the manufacture of gunpowder."

This Provisional Specification describes the making the roof, sides, and ends moveable with guides, so that should an explosion occur the gases resulting therefrom may find ready escape.

Also the compressing the materials for gunpowder in a press consisting of eccentric rollers passing over a bed or table.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 7.—N° 2755.

NEWTON, ALFRED VINCENT.—(*A communication from Mark Lamar Roberts and Fergus Peniston.*)— " Improvements in knitting and in the machinery to be used in knitting."

The object of the invention is, firstly, to adapt the machine for making plain, tubular, or circular goods, also flat fabrics and articles of wearing apparel, and also to fit it for family use, the said machine being capable of ready adjustment from the one condition to the other. Secondly, to an improved method of forming the heels of stockings.

[Printed, 1*s*. Drawing.]

A.D. 1868, September 7.—N° 2756.

STOKES, EDWARD, STOKES, EDWARD BRADNEY, STOKES, JOSEPH, and STOKES, HARRY.—(*Provisional protection only.*)—" An improved pearl ornament for ladies' wear, suitable for necklets, bracelets, " and the like."

The object of this invention is to manufacture the kinds of ornaments specified in the title of pearl. Hitherto such ornaments have been made in stone, ivory, jet, vulcanite, composition, and other similar substances, but they have not been made in pearl. Now our invention is to utilize pearl for the same purpose, in the manner described in our Provisional Specification, and we thus produce at a moderate cost a more tasteful and useful article than can be produced in any other manner.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 7.—N° 2757.

WALKER, JOHN CRAWFORD.—" Improvements in coppers or boilers for boiling or cleansing articles of " clothing and other substances."

Walker's invention consists of an ordinary copper or boiler with fire grate, same as in domestic use.

In this copper or boiler is placed an inner vessel resting on legs, being narrower at bottom than at top, with apertures in its bottom not touching the bottom of the boiler; and at the top of this inner vessel, which fits close to the boiler, are also apertures.

The space preserved between the two vessels is such as to enable the boiling water and steam (under a moderate pressure) to pass rapidly up between the two vessels, and thence through the apertures to pass through all the textiles and through the apertures at bottom, so keeping up a continuous strong current of steam and water until, by the general action and commotion, the textiles are all cleansed and washed, which by this means is effected in less than one fourth the usual time, dispensing with the old operation of rubbing, at once so laborious and so destructive of the clothes.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 7.—N° 2758.

Samuel Blatchford. — (*A communication from George Whitcher.*) — (*Provisional protection*
mprovements in rotary engines."
g disc is fixed on the main shaft perpendicularly or at right angles to the same. The said disc
otate in a cylinder or case, which is arranged diagonally or obliquely to the shaft and disc. The
made with parallel sides and plates or blocks, which form the pistons, are passed through
the disc, with their sides in contact with the sides of the case. The latter is inclined at such an
e shaft that the disc runs in contact with the sides of the case at two opposite points; the
nd exhaust ports or apertures are arranged on each side of these points, the disc being made to
ntact with the side of the case in the space between the two ports and prevent communication
m through such space.

admission and exhaust aperture on each side of the disc. These apertures must be so arranged
mission apertures on each side of the disc and also the exhaust apertures will be on opposite
orizontal or other straight line drawn through the centre to the periphery of the case. As the
the pistons project more or less on each side of the same according to their position in the
e, the projection being all on one side at the points between the ports, and equal on both sides
ween such points.

d. No Drawings.]

A.D. 1868, September 7.—N° 2759.

, Charles. — (*A communication from George Alexander Fear.*) — " Improved compositions for
ction of artificial stones, tiles, and pipes, and useful also as cements, paints, and for stuccoes."
re of novelty in this invention are found, first, in the employment of an aqueous solution of
wherewith to cement together particles of silex, aluminum, calcium, or other mineral or earthy
singly or mixed in various proportions, the mass made plastic by the shellac solution being
in moulds to form any desired useful or ornamental articles, or applied as a stucco, cement, or
it is allowed to harden. Second, in the combination of black or red oxide of iron or
with lime or cement and sand, with or without the addition of gypsum, gravel, and colouring
produce a plastic mass to be moulded into building blocks, or into any desired useful or orna-
s, and which may be used also as a stucco, cement, or paint.

d. No Drawings.]

A.D. 1868, September 8.—N° 2760.

rancis.—(*Provisional protection only.*)—" Improved lowering apparatus intended to be used
scape and for obtaining access to the exterior or other wall surfaces of buildings."
ing lowering apparatus consisting of a receptacle for one or more persons to serve as a fire escape
purpose, such receptacle being made, if desired, to act as an article of furniture.

d. No Drawings.]

A.D. 1868, September 8.—N° 2761.

mes.—"Improvements in the arrangement and construction of furnaces and apparatus employed
cesses of heating, rolling, straightening, punching, and finishing railway and other bars or forms
d steel."
tion relates to improvements in the system of arranging a series of furnaces in combination
us for introducing, withdrawing, and conveying the piles or masses of iron from one furnace
olls to another, and in the means or apparatus for conveying the rail, bar, plate, or other form
to the rotary saws for cutting off the scrap ends to the required length.

tion also relates to the arrangement and construction of apparatus for removing the burr or
from the ends of railway and other forms of bars, and in apparatus to facilitate the straightening
punching of holes in the finished rail or other form of bar.

s. 6d. Drawings.]

A.D. 1868, September 8.—N° 2762.

, Joseph.—" Improvements in the construction of machinery for making bricks."
tion consists in certain mechanical arrangements whereby the clay as it proceeds from the die or
of the moulding machine is conducted on to a roller table at the end of which it is cut into
lengths by means of a horizontal wire which is passed upwards through the same. The lengths

of clay then pass on to a moveable rack plate table, the under side of the clay being lubricated to prevent adhesion by means of an arrangement for that purpose. A stationary side or resistance plate is provided, against which the clay is pressed whilst being cut into bricks, which is effected by series of cutting wires actuated by a lever. The bricks are then passed on to a receiving board, and afterwards removed.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 8.—Nº 2763.

STOCKER, ALEXANDER RICHMOND, and EDGLEY, JOHN ALFRED.—" Improvements in hollow caps " and stoppers, and the employment of them with bottles and other vessels, and in the machinery, apparatus, " or means to be used for producing part of the same; also improvements in the articles to be employed " with such or other caps and the means for constructing them."

We manufacture and employ with bottles and other vessels caps or covers with screws formed on their outer diameters as well as in their inner peripheries.

[Printed, 1*s*. Drawing.]

A.D. 1868, September 8.—Nº 2764.

FRASER, ALEXANDER JOHN.—" Improvements in locks."

This invention relates to improvements in the construction of locks made upon what is known as the Bramah principle.

By these improvements a number of arms are connected to the treadles in such a way that on the depression of the treadles by the key the inner ends of the arms are forced forward into corresponding notches in the key.

Sometimes a piece of vulcanized india rubber is placed between the key plates to obliterate any marks that might be made on any instrument inserted for the purpose of picking the lock.

Where desirable arrangements are made for shooting the bolt of the lock without using the key.

For safes the bolts are shot out on all four sides simultaneously and one bolt only is locked.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 8.—Nº 2765.

LOWRY, GEORGE. — (*Provisional protection only.*) — " Improvements in the construction of heckling or " carding machines."

These improvements consist in—

The application of a cam pulley for increasing the number of strokes of the doffing knife. The cam is formed by cutting a groove on the pulley, which rotates on a spindle fixed to the machine and driven by a strap. A stud fixed to the doffing knife is inserted in the groove. When the pulley rotates the cam raises and lowers the knife many times for each revolution of the pulley, and the doffing roller can be made by the cam to rotate at greater speed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 8.—Nº 2766.

AUB, IGNACE. — (*Provisional protection only.*) — " Improvements in advertising match boxes and spill " holders."

This improved advertising match and spill holder consists of a vase of earthenware, glass, crystal, or any other suitable substance, the form of which is such as to admit of its having round its exterior surface and in its centre a number of medallions, tablets, shields, or escutcheons. The forms most suitable for the purpose are either pentagonal, hexagonal, octagonal, or polygonal, and on which the advertisements are placed, and can be renewed or replaced by others when desired, such advertisements being tastefully decorated or otherwise ornamented or coloured so as to add to the general effect of the vase and enhance its beauty.

The tablets are provided at either side with a movable groove to admit of the advertisements (which consist of small placards on enameled tin or glazed card-board) sliding therein, the top of the tablets or shields being furnished with a movable band of gold or other bright metal, and forming part of the shield, working on hinges, so that it can be raised when the card for advertising is inserted and pressed down in its place, which keeps the card in position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 8.—Nº 2767.

SOULAGE, PIERRE ISIDORE.—(*Provisional protection only.*)—" An improved indivisible pin to be used in " fastenings of jewellery or other fastenings."

The features of novelty in and advantages of my improved indivisible pin are that it is composed of two which when in situ form a species of bow, the pin taking the place of the string and the point ng an aperture in one end of the bow prevents its becoming accidentaly detached, while at the time it serves as a guard to protect the person from injury.

head of the bow or body of the pin is traversed by the pin itself, which is furnished at the top a screw. The head of the pin terminates in a button or knob, just below which it is screw cut orresponds with a screw made in the head of the bow. The other end of the pin is pointed, and to an aperture for its reception made in the opposite end of the bow.

pointed end of the pin may also be screw cut, and the aperture in which it engages similarly led with a screw, which will give additional security to the pin and entirely preclude the possibility becoming detached, as is so frequently the case with those in present use, and with the advantage the sharp point is protected and prevented from injuring the person by the aperture, which serves uard.

fixing the pin it is simply necessary to turn the head, which has the effect of unscrewing the point aising the pin, which can then be passed through the shawl, dress, or other article. It is then d in the opposite direction and is fixed by the screw at the head, the point of the pin entering perture or guard, and in cases where the point is screw cut it enters the screw of the aperture and nes securely fixed.

rinted, 4*d*. No Drawings.]

A.D. 1868, September 8.—N° 2768.

TAM, Edward.—"Improvements in rolling and shaping iron or other metal for the manufacture of oes for the feet of horses and other animals, in machinery employed therein, and in tools for preparing feet for the reception of the shoes."

is invention applies chiefly to shoes known as the Goodenough shoes, patented 30th January 1861. nsists,—

t. In rolling two bars (suitable for shoes) together, the two being united by a web, which is cut when ars are to be bent into the form of shoes.

d. In means of inserting into the rolls pieces of steel to constitute the raised surfaces. The steel pieces lit at back and a steel plate is inserted therein, so that when the pieces are driven into dovetailed recesses rolls the plates cause them to expand.

. In machinery for bending or shaping bars into shoes. This machinery mainly consists of a recipro- shaping tool and two pairs of vertical rollers. The tool carries the bar between the first pair of rollers, bending it, then on to the second pair, which are thereby forced apart, the first pair at the same time g in to form the heels of the shoe.

. In tools for preparing horses' feet for shoes. These consist of files or rasps with a safe edge flange t the wall of the foot may be prepared without risk of injuring the sole or frog.

equalize the wear of the shoes, pieces of steel are let into the toe or calks.

rinted, 8*d*. Drawing.]

A.D. 1868, September 8.—N° 2769.

ART, John, and NICHOLSON, John.—"Improvements in continuous expansion engines and in valves to be used therewith or with ordinary engines."

chief features of novelty in our invention are;—

The use of perforated or cellular ports in the side of the cylinder that receives the steam from the , these ports being set as far from the centre as the versed line of the connecting rod.

The use of a hollow self-acting valve which may be termed a travelling steam chest.

The use of a regulating or retaining valve connected with the exhaust port and interposed between it e condenser or the atmosphere according to form of engine used.

r the application of the said valve to any part of the cylinder for retaining the steam that has worked ton the up and down stroke.

nted, 10*d*. Drawings.]

A.D. 1868, September 8.—N° 2770.

KE, Thomas Edward.—"Improvements applicable to open fire-places."

he back of the fire-place is constructed an arch under which part of the burning fuel is placed; a d flue provided with dampers rises from this arch to conduct the heat and smoke in any desired on.

inted, 10*d*. Drawing.]

“ apparatus employed therein.

According to this Provisional Specification an engine is caused to work an air pump fo
heated coil and thence into the boiler, and the mixed air and steam pass to the engine.
valves are actuated by cams. The air is sometimes heated by passing it through hollow
rises through the water in the boiler, partitions of wire gauze or similar material minutely divid

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 8.—N° 2773.

JOHNSON, Ellen.—“ Improvements in the manufacture or ornamentation of muffs, cuffs,

According to my invention I make muffs, cuffs, and collars of pheasant feathers, which are
to a backing, with the feathers depending on either side when applied on the muff foundation,
top being concealed by a braid or otherwise. The long feathers are placed at the lower edges
on either side.

In the case of cuffs the feathers are preferably all placed in the same direction on the backi
feathers depending on one side of the cuff. For collars the feathers might either be of uniform
graduated length as before.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 9.—N° 2774.

MILLWARD, John.—(*A communication from Joseph Nason.*)—“ Improvements in steam boil

This invention relates to “drop tube” boilers, and consists in extending the outer tubes u
the tube plate and providing the inner tube with a bend at the upper end passing through suc
the outer tube, so that the water passes into the inner tube below and out of the way of the
with steam issuing from the outer tube.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 9.—N° 2775.

ADAMS, John, and BARRETT, Henry.—“ Improvements in apparatus for supplying the
“ manufacture of aërated beverages and other liquids, also applicable to other purposes.”

This invention consists in an improved pump or apparatus for supplying any required quanti
aërated or other beverages. It is also applicable for other purposes, such as drawing or
required quantity of liquid or forcing any required quantity of liquid to any required place.
larly adapted for bottling effervescing beverages, as it puts a given quantity of syrup into each
same time as the bottle is filled with aërated water, which is a great advantage to manufactur
beverages.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 9.—N° 2776.

COVERT, Lewis Buckingham.—(*Provisional protection only.*)—“ Improvements in extensio

Side pieces are provided, between which cross pieces are secured forming the steps of the low
the ladder. The inner faces of the side pieces are grooved, and in these slide the extension

re brought together as their inner surface is worn by the friction of the rod, by the aid of an
ce on their end corresponding with a similar inclined surface formed on the packing gland, the
lf adjusted by means of a spring on the end of the socket. The escape of steam around the
revented by the insertion of an ordinary packing ring in the cylinder cover in connection with
ents received in recesses made in the end of the socket.
Drawings.]

A.D. 1868, September 9.—Nº 2778.

XANDER MELVILLE.—(*A communication from Constant Jardy.*)—" Improved means of in-
ly opening envelopes and of attaching them to the letters they contained."
readily open the envelope without breaking the seals or injuring it in any way I introduce a
ts bottom edge having a bead or wax head at either end projecting beyond the envelope to
ing drawn through on pulling the thread, and by means of which the envelope is cut through
e for obtaining access to the letter enclosed.
l I provide a means of attaching the envelope to the letter by gumming it along one end.
Drawings.]

A.D. 1868, September 9.—Nº 2779.

ARD.—" Certain improvements in steam engines."
on relates, first, to that class of steam engines or motors known as the " Corliss," and more
that portion of such steam engine known as the exhaust valves; the object of my improve-
k the exhaust valves independently without any intervention or connection with the steam
the employment of a second or separate eccentric or eccentrics, connecting rods, and " wrist "
" wrist " plate being situated on the same centre with the wrist plate of the steam valves, or it
in any other convenient and suitable position.
part of my invention relates to the " glands " or stuffing boxes employed for keeping those
enings perfect and steam tight, through which piston rods, valve spindles, or other rods or
ssing through apertures formed in the cylinder or other steam enclosures slide, oscillate, or
e. The improved construction of gland or metallic steam retainer consists in the substitution
y cap of the stuffing box now employed (exerting a pressure upon the interior hemp or packing)
d neck or boss constructed so as to embrace the piston or other moving rod and inserted in the
fice formed in the present construction of stuffing box.
o the third part of my improvements, relating to the condensors and air pumps of compound
der horizontal engines, I place the condensor immediately under the vertical centre of the
on one side, in the former arrangement when underneath the vertical centre the air pump has
derneath the condensor, being connected thereto by an independent passage or thoroughfare
nd delivery valve of such condensor, which are connected to and placed on one side thereof,
oroughfare of the cylinder being connected direct from above with the condensor, in the latter
hen the condensor is situated or placed below and on one side of this cylinder the foot and
take up an intermediate position between the condensor and air pump, the plunger or piston
p in both cases being actuated by means of a coupling or connection with the lever worked
head or lever giving the parallel motion to the piston rod.
classes of engines having independent steam and exhaust ports, I provide in the cylinder
aces or chambers in which the valves for the entrance and exhaust of the steam to and from
re placed, making thereby the valves and thoroughfares independent and separate from the
linder. I also prefer the employment and use of a syphon or zig-zag formed spring for giving
n to the valves when closing in contradistinction to the helical coiled or flat springs now

improvements relate to casing or coating the periphery or block of the steam pistons with a
to that with which the block is composed, thereby making the portion of the piston coming
contact with the interior surface of the cylinder more durable.
10*d*, Drawings.]

A.D. 1868, September 9.—Nº 2780.

LFRED VINCENT.—(*A communication from James Wilson and Charles Frederick Mudge.*)—"An
t in pumps."
s made hollow with passages leading from either side or face to the hollow piston rod. Fitted

A.D. 1868, September 8.—N° 2771.

BENJAMIN, Samuel.—(*Provisional protection only.*)—" A new or improved blind for hansom cabs or " other open vehicles."

This invention consists in the employment of a semi-circular glazed sash frame which on being pulled up or down does not roll or unroll like those at present in use, thereby forming a thorough protection from wind and weather and yet admitting of free ventilation.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 8.—N° 2772.

WARSOP, George.—" Improvements in obtaining motive power by means of air and steam and in " apparatus employed therein."

According to this Provisional Specification an engine is caused to work an air pump forcing air into a heated coil and thence into the boiler, and the mixed air and steam pass to the engine. The air pump valves are actuated by cams. The air is sometimes heated by passing it through hollow fire bars and it rises through the water in the boiler, partitions of wire gauze or similar material minutely divide it.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 8.—N° 2773.

JOHNSON, Ellen.—" Improvements in the manufacture or ornamentation of muffs, cuffs, and collars."

According to my invention I make muffs, cuffs, and collars of pheasant feathers, which are sewn singly to a backing, with the feathers depending on either side when applied on the muff foundation, the seam at top being concealed by a braid or otherwise. The long feathers are placed at the lower edges of the backing on either side.

In the case of cuffs the feathers are preferably all placed in the same direction on the backing, the lower feathers depending on one side of the cuff. For collars the feathers might either be of uniform length or of graduated length as before.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 9.—N° 2774.

MILLWARD, John.—(*A communication from Joseph Nason.*)—" Improvements in steam boilers."

This invention relates to " drop tube " boilers, and consists in extending the outer tubes upward beyond the tube plate and providing the inner tube with a bend at the upper end passing through such extension of the outer tube, so that the water passes into the inner tube below and out of the way of the water charged with steam issuing from the outer tube.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 9.—N° 2775.

ADAMS, John, and BARRETT, Henry.—" Improvements in apparatus for supplying the syrup in the " manufacture of aërated beverages and other liquids, also applicable to other purposes."

This invention consists in an improved pump or apparatus for supplying any required quantity of syrup to aërated or other beverages. It is also applicable for other purposes, such as drawing or measuring any required quantity of liquid or forcing any required quantity of liquid to any required place. It is particularly adapted for bottling effervescing beverages, as it puts a given quantity of syrup into each bottle at the same time as the bottle is filled with aërated water, which is a great advantage to manufacturers of aërated beverages.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 9.—N° 2776.

COVERT, Lewis Buckingham.—(*Provisional protection only.*)—" Improvements in extension ladders."

Side pieces are provided, between which cross pieces are secured forming the steps of the lower portion of the ladder. The inner faces of the side pieces are grooved, and in these slide the extension ladder. Stop bolts are provided to hold the extension ladder at any desired point, and legs at the back, fitted to extend, support the ladder when required.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 9.—N° 2777.

CLARK, Alexander Melville.—(*A communication from Henry Bertrand and François Velut.*)—" Improvements in metallic spring packings."

In making a steam tight piston rod packing I provide a metal socket in the stuffing box made in two

A.D. 1868, September 10.—N° 2785.

ADLEY, Ezra.—(*Provisional protection only.*)—" Improvements in anchors."

According to this invention the flukes or holding parts of the anchor are arranged on opposite sides of he arms instead of at the ends of the arms as is usual. The flukes are situated at right angles, or nearly o, to the arms. It is preferred to use a series of three flukes on each side of the arms. By this invention he holding power of the anchor is increased and the strain is distributed equally over the whole of the arms.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 10.—N° 2786.

RCHIBALD, Samuel George.—(*Provisional protection only.*)—" A new method of and improved apparatus for reaping corn and other grain upon an improved method to that usually practised."

The invention consists in a mechanism or apparatus for reaping, upon the novel or improved method ereafter mentioned, grain, particularly wheat and barley, that is, by cutting off the ears or heads of the op, and as fast cut having them carried off to a place of safety under cover, where at any convenient me, should the ears require drying, that can be done in various ways either by exposure to the air in fine eather, by kilns, or by Gibbs' hot air process.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 10.—N° 2787.

cNAUGHT, William.—(*Provisional protection only.*)—" Improvements in steam engines, steam boiler and other furnaces, and in apparatus for heating feed water."

1. Consists in fire bars arranged lengthways of the furnace, so that all will slowly move forwards together, ad then all will be suddenly drawn back by suitable mechanism; thus the fuel fed in front is gradually rried forward towards the bridge. Combined with the fire-bars arranged as above described is a hopper ving rollers with spike teeth for feeding the fuel on to the bars. The bars are also connected to rock terally. 2. Consists in a hollow firebridge of iron or fire clay made in one or more parts, the gases pasing nder or through the bridge, which is perforated to allow air to pass downwards from the bridge. 3. Consists driving the scrapers of water heating apparatus by a mangled toothed wheel and making scrapers of flat ates.

4. Consists in applying [*an oscillating**] compensating wheel or arms with weights worked by the piston rod the engine, so that the excess of pressure at the beginning of the stroke will be absorbed by the inertia the mass of the wheel, and given back during the latter half of the stroke, thus equalizing the driving rce nearly. 5. Consists in a long valve made hollow, from which the exhaust steam escapes through a ng slot in a corresponding slot in the valve facing of the cylinder, and in adjusting superimposed sliders the back of the valve to cut off the steam to the cylinder by right and left handed screws at the exterior the valve chest actuated by the governor. 6. Consists in making packing rings for pistons and air-mp buckets flexible by forming them of a certain curve on the interior flange instead of has hitherto ne, and in bringing pistons to their true central position when worn by wedges or screws. 7. Consists in bricating by forcing the tallow or other matter from its receptacle to the parts to be lubricated by mping water by hand or power into the lower part of the receptacle and forcing the tallow out at the per part.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 10.—N° 2788.

AYNES, John.—" An improved self-acting arrangement of mechanism for supplying weft without stoppage to looms."

The features of novelty in this invention consist in the application to over or under pick looms of an rangement of mechanism for changing the shuttles either to replenish weft or in case of breakage of the eft at one and the same end of the slay, and at or about the front centre of and within about a quarter of revolution of the crank shaft.

[Printed, 1*s*. Drawing.]

A.D. 1868, September 10.—N° 2789.

BOTSON, Alfred Buckingham.—(*A communication from Honoré Demoor.*)—" Improvements in railway fastenings."

This invention has for its object the fishing or uniting of the ends of railway rails, and consists in the mbination of an elastic gripping steel or Bessemer metal clip with two or more bolts and nuts, by which eatly increased security in the joints will be obtained.

[Printed, 8*d*. Drawings.]

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* The words "an oscillating" are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the ginal Abridgment.

in the piston are puppet or other suitable valves (without spindles) which serve alternately to close the openings in the opposite faces of the piston, and thereby opening a passage for the fluid to be raised alternately through the upper and the under face of the piston to the discharge passage formed by the hollow piston.

[Printed, 6*d.* Drawing.]

A.D. 1868, September 10.—N° 2781.

SHAND, JAMES.—" Improvements in steam boilers."

Consisting in arranging water tubes in alternate layers in positions inclined from the horizontal, the layers crossing each other so that a delivery of steam is obtained at one side of the boiler from the upper ends of the tubes, a flow of water back to the other side into the lower ends, and a free discharge of steam from the tubes into an increasing space.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 10.—N° 2782.

DAVIES, GEORGE.—(*A communication from Joseph Victor Combe.*)—" Improvements in stamping or " embossing horn, leather, and other materials, and in the apparatus employed for such purpose."

The invention consists principally in the application and adaptation of the hydraulic press to the stamping or embossing of articles of horn, leather, and other substances, and especially to the manufacture of buffalo horn and other buttons.

The apparatus is composed of a pump body or cylinder in cast iron or other metal fixed in a wooden bench or otherwise. It is terminated at its upper part by a cast iron or other bridge or spanner, and is closed at its lower part by a cover or valve facing connected by flanges to the body of the pump. The cover is provided with three orifices or ports arranged in the same manner as those of a steam engine.

Beneath the lid or cover is fixed a valve box enclosing a slide valve actuated by a cam or projection from a hand lever. Under the valve box is screwed or otherwise fixed the water-supply pipe communicating with a reservoir or with a pressure regulator, into which water is forced by a pump actuated either mechanically or by hand.

The dies containing the article to be stamped are placed on the piston head (which passes out through a water tight cup leather) and beneath the bridge or spanner after having been previously heated, as is usual in this manufacture.

The apparatus as above described will only press or emboss one button or other article at a time, but it will easily be understood that by placing the apparatus on its side or in a horizontal position and fixing two long parallel guides between the cylinder and the bridge or spanner fifteen or twenty pairs of dies may be placed between the piston head and the latter, and be thus actuated at once, and by applying this arrangement to both ends of the cylinder and placing the valve box at the top or side the apparatus may be made double acting, so as to operate a series of dies alternately at each end.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 10.—N° 2783.

BENNETT, THOMAS.—" Improvements in the manufacture of spoons, forks, and ladles, which improve- " ments are also applicable to handles generally composed of sheet or hoop iron or other sheet metal, and " in the machinery or apparatus employed therein."

This invention consists in producing by rolling a longitudinal hollow strengthening bead or corrugation along the narrow portion of the blanks from which spoons, forks, ladles, or other like articles are to be manufactured in order to strengthen the handles thereof. These hollow beads are also rolled in the hoop iron itself before cutting out the blanks.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 10.—N° 2784.

LEJEUNE, AUGUSTE ANTOINE.—" Improvements in the manufacture of certain colours employed in " printing fabrics."

The colours for printing, to which my improvements are applicable, are all the colours produced by madder or preparations of madder. My invention consists in combining with the said madder colours a certain proportion of a preparation of palm gum commonly called sago.

[Printed, 4*d.* No Drawings.]

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[illegible] in the mode of constructing
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[illegible] for bedsteads, mattresses, sofas,

[illegible], without the aid of either bolt,
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[illegible] that the chain when formed, be it
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[illegible] sion, the strut stanchions being erected
[illegible] link in the chain), and resting at the same

[illegible] compound truss chain, applicable to many
[illegible] and at far greater cost in constructing, has been

[illegible]

[illegible] 11.—N° 2798.

[illegible] Improvements in wood-cutting machinery."
[illegible] and arrangement of machinery chiefly suitable for
[illegible] be applied for other purposes.

A.D. 1868, September 10.—N° 2790.

MATTON, Carl Henrik Julius.—(*Provisional protection not allowed.*)—"Improvements applicable "to stockings and other coverings for the feet."

The toe and heel of stockings or socks are protected from undue wear by applying small pieces of linen cloth inside the stocking.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 10.—N° 2791.

TRAGHEIM, Samuel.—(*Provisional protection not allowed.*)—"An improved mode of and apparatus for "cleansing fibrous materials."

An apparatus consisting of an inverted pan or flanged disc pierced with holes and fitted at its centre with a vertical tube having hollow taper arms is placed in the boiler intended to receive the clothes, and the detergent solution being sufficiently heated the liquor discharges in continuous streams through the tube and taper arms on the clothes placed in the copper.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 10.—N° 2792.

CHALLENDER, Joseph, and KITCHEN, Benjamin.—"An improved mechanical apparatus to be "employed for placing and securing 'fog' or 'detonating' signals upon the rails or metals of railways."

The novelty of the invention consists in securing or attaching to the guard's van forming the termination of a railway train an inclined groove or channel, into and down which a detonating or other like signal is carried on to a foot lever at the bottom of such groove in close proximity to the rail or metals, the said foot lever forming one arm of a bell crank to which a rod communicating with a handle in the guard's van is attached, through which motion is transmitted to the lever charged with the signal, causing it to be thrown over so as to press and secure it to the rail or metals by means of spring clips, thereby leaving such signal secured to the rail ready to be exploded and alarm the next train passing over it.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 10.—N° 2793.

OLIVER, John, and McALLUM, Charles Octavius.—"Improvements in the utilization of the "alkaline, neutral, and saline salts contained in the mother liquors or weak alkali resulting from the manu- "facture of crystals of soda or other alkaline salts."

The invention consists in the utilization of such alkaline neutral and saline salts in the manner following, that is to say,—

Firstly, we make use of the said salts for the preparation of "esparto grass" and other vegetable substances to obtain therefrom fibrous material applicable for paper making and for textile manufactures.

Secondly, after boiling the vegetable substance with the caustic ley, as above described, we recover from the latter by ordinary well known chemical processes, carbonate or other commercial salts of soda.

Thirdly, by the addition to such mother liquor or weak alkali of sulphate of magnesia or other compound or preparation of magnesia or of lime (or both lime and magnesia) we obtain therefrom various chemical compounds, such as carbonate and hydrate of magnesia, sulphate and phosphate of soda, and other more valuable salts or products not hitherto obtained from such mother liquor or weak alkali.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 10.—N° 2794.

CRULS, Auguste.—"An improved press for the manufacture of cement tiles, patent fuel, and other "analogous products."

The frame of the machine consists of two upright portions, the top being semicircular and pierced with a screw-thread opening, through which the main screw passes. Motion is given to the latter by a horizontal fly wheel placed at its upper extremity and provided with several handles. The last mentioned fly wheel acts upon a smaller concentric one, on which are two or more cams, which cams, when brought in contact with similar cams formed on the screw-head, produce by the action of the larger fly wheel a succession of strokes. The bottom of the main screw is fixed to the compressor. At each corner of the bed of the press is a hole, through which holes pass small upright moveable columns. The columns rest upon a cross-piece and carry the moulds or screws, to which motion is given by a small fly-wheel, raises the mould to allow the tile or other article to be withdrawn, or lowers it to be filled with fresh material.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 10.—Nº 2795.

AKE, WILLIAM ROBERT.—(*A communication from Franklin Ransom.*)—"Improvements in condensing apparatus for steam engines."

The nature of my invention consists, first, in locating the condensing vessel at the crown of a syphon, the gth of the longer leg of which is in excess of that of a column of water which would be sustained by the uum obtained in the condensing vessel, so that the said long leg will constitute a waste pipe which will ry off the injection water by its own gravity against the pressure of the atmosphere, while the shorter leg l constitute the injection pipe, in which atmospheric pressure will raise the water to a heighth corresponding the degree of vacuum obtained. The said invention consists, secondly, in the employment of several ste pipes of small bore, the aggregate capacity of which shall not exceed that of the injection pipe, the ect being to cause the waste water to effectually carry off all air which may enter the condenser with the ection water or from small leakages of the joints. The said invention consists, thirdly, in the connection pump to the injection pipe in such manner that it will raise the injection water from the supply well to condenser; and, fourthly, in the arrangement of a secondary injection pipe in connection with a par-oned condenser, by which a portion of the injection water by being first brought in contact with the am may be heated to the highest possible temperature for the purpose of feeding the boiler.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 10.—Nº 2796.

ENDERSON, ARTHUR CHARLES.—(*A communication from Henri Suser.*)—"Improvements in the rnamentation of boot and shoe straps, and in elastic side springs."

The features of novelty in this invention consist in the arrangement of the tissue, which is round at the ges and is woven of an exceptional strength and has a double face, one side being emerald green and ring three gold lines woven in it, one on either side of the strap, and one in the centre much finer than others.

The other side of the band is green and white, having 10 small green stripes woven in it, the two outside es being the widest, and 9 small white stripes in imitation of chain stitch, in all 19 stripes, alternate green d white.

For the side springs of boots & shoes a gold and green stripe are employed, one above the other, both the top and bottom of the elastic.

The object of this invention is to secure the inventor against fraudulent imitations of his workmanship, as h pair of boots or shoes would be furnished with a pair of these straps and side springs.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 11.—Nº 2797.

VANS, ORMROD COFFEEN.—(*Provisional protection only.*)—"Improvements in the mode of constructing girders and other parts of bridges, and beams and girders and other parts in other structures and super-structures, parts of such improvements being applicable to spring bottoms for bedsteads, mattresses, sofas, or other articles."

The novelty of this invention consists in the mode of locking together, without the aid of either bolt, et, or pin, for bridges, arches, beams, and girders and other structures, first, a series of links or minor rts made of round, square, or flat bar iron or steel, in such manner that the chain when formed, be it rved or straight, is rigid from the lock side, if not laterally; and then greatly increasing this degree of idness by interlocking on both sides of the chain alike in compression a series of straining rods, each ked at one end and in succession to and within a square or oblong link, and the other end to and within h third, fourth, fifth, or tenth in remove in like order of succession, the strut stanchions being erected under the side bar of each square link (which is every other link in the chain), and resting at the same e on two or more, instead of but one, straining rod.

n this way from very light material is made a very strong compound truss chain, applicable to many poses where usually a much greater amount of material, and at far greater cost in constructing, has been ployed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 11.—Nº 2798.

OBSON, BENJAMIN, and SLATER, WILLIAM.—"Improvements in wood-cutting machinery."

Our invention consists in an improved combination and arrangement of machinery chiefly suitable for ning and sand papering mule carriages, but it may be applied for other purposes.

The machinery consists of two circular saws for cutting off wedge ends and other projections, two upright cutters for planing the sides, and two horizontal cutters for planing the top of the carriage, also a apparatus for applying the sand, glass, or emery paper.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, September 11.—N° 2799.

THOMPSON, William.—(*Provisional protection only.*)—" Improvements in machinery or apparatus for " sifting, cutting, and mixing tea."

This invention consists in combining with a tea mixing machine described in the Specification to Patent No. 1861 of 1866, a tea cutting and sifting apparatus, of which the tea cutting apparatus consists of a cylindrical casing containing a rotating drum, both of which are made slightly tapering and are provided with cutting edges. The drum being adjustable in the direction of its length, the distance between the fixed and rotating cutting edges can be regulated so as to cut the tea to a greater or less degree of fineness. The tea passes from the cutting machine into the mixing machine. The sifting machine, which is situated at the top of the cutting machine, consists of a casing containing sloping screens into which the tea is first introduced for separating nails, stones, &c. therefrom, from which screens the tea passes into a cylindrical revolving sieve for separating the dust and small tea from the large tea, which latter is made to pass through a shoot into the cutting machine, while the former is made to pass direct through another shoot into the mixing machine. The sifting and cutting machine may be employed separate from the mixing machine.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 11.—N° 2800.

GODFREY, Benjamin Davenport.—(*Provisional protection only.*)—" Improvements in the mode of " and means for securing soles upon boots and shoes, part of which improvements are applicable to other " purposes."

I employ sprigs which are formed with screw threads, but which instead of being inserted by turning or screwing them in are driven into the sole like an ordinary nail or peg, two or more threads being formed on the sprig to give the screw a quick pitch, so that the act of driving in the sprigs causes their rotation in the leather. The threads of my improved screw sprig are preferably bevelled or inclined only on the front side, the back of the thread being cut square down to the bottom or nearly so. If the point is driven beyond the surface of the sole the sprig may be clinched. I prefer to leave a small portion at the outer end plain or without the screw thread. The sprigs are tapered gradually from about the centre to the point so that they may drive more easily into the leather.

The said sprigs, though chiefly designed for the purpose above set forth, may be employed for other purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 11.—N° 2801.

HUDSON, Isaac.—(*Provisional protection only.*)—" Certain improvements in self-acting 'tilts' for casks, " barrels, or other receptacles."

The novelty of the invention consists in tilting a barrel or other receptacle containing liquor by means of a counterbalance lever and quadrant, the arrangement of which gradually tilts the barrel by self acting means as the liquor is withdrawn therefrom.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 11.—N° 2802.

BULLOUGH, John.—(*Provisional protection only.*)—" Improvements in warping or beaming machines."

First, this invention consists in relieving the warper from the necessity of turning the yarn beam by hand to take up the slack of the bobbins before starting the machine after a stoppage, which is accomplished by means of friction gear.

Second, in a modification of the reversing motion. And,

Third, in preventing the " fluke " from getting into the slots in which the pins work.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 11.—N° 2803.

HUGHES, Edward Thomas.—(*A communication from Jean Delage and Alfred Boudinot.*)—" An improved " mode of annealing gauze wire."

ze wire is passed over a hollow cylinder heated internally by jets of gas or other suitable means,
ing imparted thereto by other cylinders (to which the gauze may be fixed) rotated by hand or

, 6*d.* Drawing.]

A.D. 1868, September 11.—N° 2804.

ER, BENJAMIN, and FAULKNER, TOM HENRY. — (*Provisional protection only.*) — " Improve-
the manufacture of umbrellas and parasols, and in the production of fabrics suitable for use in
nufacture, and for other purposes."
visional Specification describes forming a fabric from China grass, dyeing the fibre before weaving.
ing umbrellas and parasols with China grass fabric, either made as above stated or otherwise.
, 4*d.* No Drawings.]

A.D. 1868, September 11.—N° 2805.

, GUSTAV, junior. — " Improvements in the precipitation and separation of copper from its
s."
g to this Provisional Specification the solution is precipitated by means of spongy iron in a
cask or vessel. The liquor is afterwards filtered off through a bed of moss, and from the space
filter bed a descending pipe passes, and the liquor descending through this pipe hastens the

, 8*d.* Drawing.]

A.D. 1868, September 11.—N° 2806.

S, JOHN.—" An improved portable stove."
elty of this invention consists principally in forming the outer part or case of the stove of two
heet metal of the same shape but differing in size, the outer piece of metal being larger round
nner piece, so as to leave space between the two pieces. The outer piece is formed perforated
ner piece solid, and the space between these two pieces is filled with terra cotta or other similar
bstance or material; the top of the case is formed similarly. By these means the terra cotta is
from breakage.
, 8*d.* Drawing.]

A.D. 1868, September 11.—N° 2807.

S, JOHN. — (*Provisional protection only.*) — " Improvements in shoes for horses and other
eds."
elty of this invention consists in forming shoes to be applied to the feet of animals as to
ith the necessity for driving nails into the hoofs thereof, as commonly practised for affixing the
eir feet. To obviate this objectionable mode of fixing it is proposed by this invention to employ
leather or other suitable material of the same shape and size as the hoof of the animal to which
applied, the said piece of leather or other material being formed open at the back to allow the
ot to be inserted thereinto.
, 4*d.* No Drawings.]

A.D. 1868, September 11.—N° 2808.

GEORGE, and HOLLINSHEAD, WILLIAM.—" Improvements in gas engines."
ention consists in the use in gas engines of two oscillating cylinders placed at right angles to
, and having their piston rods coupled to the same crank. They are supported by two cast-iron
bolted on to a sole plate, each cylinder being provided with piston and rod, one eccentric and rod,
lve box. One of the cylinder covers has apertures cast in it for the admission of atmospheric
side of the piston. The valve is divided vertically in the direction of its motion by a partition
the supply and exhaust ports from the ignition port. The supply and ignition ports have each
trances into the cylinder. The combined motion of the valve worked by the eccentric and the
motion of the cylinder enable the operations of admitting the explosive mixture, ignition, exhaust,
ing to be performed in a simple manner.
with a solid plunger piston is provided for pumping the gas and air into a receiver cast on the
h pump, suitable pipes and apertures serving to convey the gas and air into the said pump
lves and cocks. A small hand pump is fixed near the above pump for the purpose of starting
with pipes and cocks connecting it with the gas and air supplies and with the cylinders.
, 1*s.* 4*d.* Drawings.]

A.D. 1868, September 11.—N° 2809.

HENRY, Michael.—(*A communication from Pierre Michaud and Louis Joseph Jay.*)—"Improvements in "apparatus for weighing, and also in cranes or lifting apparatus combined with weighing apparatus."

A lever or beam, or the axis thereof, works on a knife edge or knife edges. One arm of the lever or beam carries the article to be weighed, a tray, plate, pan, platform, or other support or holder for the same being connected with or formed on the arm. The other arm of the lever or beam is formed or furnished with a counterpoise. The lever or beam rocks, works, or oscillates on the knife edges, and it or its axis is connected with or works appliances which actuate a pointer travelling over a graduated dial to indicate the weight. When an article or matter to be weighed is placed on the lever or beam the counterpoise arm swerves from the perpendicular, being pendulous, and by the arrangements connected with it it acts on the pointer which indicates the weight on the dial.

Some instances are described, for example, a weighing machine, in which the lever or beam or its axis carries a friction roller acting on a bent lever carrying a toothed segment in gear with a pinion on the axis of the dial pointer. The lever or beam may be supported on a stand or suspended on a pendant frame or arm. A steelyard is described in which one arm of the lever or beam is connected by crank arms working on knife edges and supporting the tray, plate, or platform for receiving the article to be weighed.

Cranes or lifting apparatus combined with weighing apparatus are constructed in which one arm of the lever or beam is connected by a bar or rod working on one or more knife edges to the jib or weight supporting arm of the crane or lifting machine, which is jointed, articulated, or moveable, so that it may change its position as necessitated by the weight, and thereby work the lever or beam and cause motion to be transmitted therefrom to the pointer.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 12.—N° 2810.

WOODCOCK, Henry Brook. — "A new manufacture of metal for axles, rails, tyres, and other "purposes."

The invention relates to an improvement in the manufacture of metal especially suited for axles, shafts, rails, tyres, and other purposes where hardness and malleability are required so as to produce the same in a comparatively inexpensive, simple, easy, and rapid manner, resembling steel as regards density, with more or less the hardness and durability thereof, while retaining the tenacity and ductility of wrought iron.

My said invention consists in the employment of steel bars with the metal in the puddling furnace during the process of puddling pig or refined metal into wrought iron, such steel bars being cut into small pieces or suitable lengths, the quantity or proportion of the said steel bars to mix with the metal varying from about one-twelfth ($\frac{1}{12}$) to one-third ($\frac{1}{3}$) in weight of the mass of metal with which it is to be mixed according to the purpose and degree of hardness and malleability required, and then boiling, puddling, or working the whole together, which may be done by any puddler in the ordinary process of puddling.

In the manufacture of this metal care must be taken that the pieces of steel are equally distributed or well mixed with metal in the puddling furnace, so as to ensure the mass being as homogeneous as possible.

The steel thus mixed with pig or refined metal in the puddling furnace may be of any suitable kind, but *blistered* steel is preferred.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 12.—N° 2811.

TURNER, Charles.—(*Provisional protection only.*)—"Certain improvements in furnaces."

The novelty of the invention consists in directing a current of cold air into the midst of the furnace above the bars, which mixing with the gases evolved from the fuel passes over an elongated bridge which is arched over with fire brick, the construction of which forms a heated passage or thoroughfare for the combined gases, thus effecting their thorough combustion.

[Printed, 4*d*. No Drawings.];

A.D. 1868, September 12.—N° 2812.

RODGER, Alexander Wyllie.—(*Provisional protection only.*)—"Improvements in caps or bonnets."

The feature of novelty which constitutes this invention is the employment of a piece of expanding and contracting material inserted in any suitable part of the mouth of the cap or bonnet so as to enable it to fit several sizes of heads.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 12.—N° 2813.

ARNER, Frederick.—"Improvements in constructing bore holes or wells, and in pumps to be used therewith, and for other purposes."

According to this Provisional Specification a hole is bored into the ground, a lining tube being used to event the sides of the hole falling in. When the water stratum is arrived at the suction pipe of the pump put down inside the lining tube; this tube is then withdrawn and the earth rammed in around the ction pipe. The Specification also describes pumps to be combined with bore holes and for other purposes, arrangement being such that the suction valve is alway covered with water and that a vacuum space in nnection with the suction pipe is provided.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 12.—N° 2814.

RNER, Edward.—"Improvements in packing for pistons, piston rods, and other parts of machinery requiring to be similarly packed."

According to this Provisional Specification the inner bark of the linden or lime tree is employed in king packings.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 12.—N° 2815.

KE, William Robert.—(*A communication from Joseph Sheldon.*)—"Improvements in machinery for manufacturing brushes."

These improvements relate more especially to mechanism for the manufacture of brushes in which tufts bunches of fibre are secured by separate wire staples in perforations formed partly through the brush ock or block, the said tufts of fibre being bent or doubled and inserted into the perforations with the wire aples which clasp them and secure them in the stock. The object of the said improvements is to secure more perfect application of means than has heretofore been devised for automatically feeding, separating, d spreading the bristles into bunches or tufts, and to provide a more perfect and complete method or mbination of means for adjusting the brush back or stock to insure regularity in the insertion of the fibre, ch means acting in concert with suitable devices for inserting and securing the tufts. The bristles or her fibres are carried upon belts arranged to run upon pullies having an intermittent motion which may produced by means of a ratchet. A divider is employed to space the bristles into knots or tufts, and gers are made to spread out laterally to effect or complete the separation of the bristles into tufts and erwards to carry or push forwards the same for insertion in the brush back or block. The fingers are de to lift and release the divider to secure the proper spacing of the bristles. A slide operates conjointly h and independently of the fingers to effect a timely hold feed and release of the tufts. The fingers are erated by pins which work in slots in a slide and in combination with an inclined plane and arm in such nner that the fingers are first expanded, afterwards moved forwards, and subsequently in their back oke made to rise for the purpose of lifting the divider which spaces the bristles into knots or tufts. The d fingers operate in combination with a cutter which divides the wire, a former which forms the staples; s which bend the staples over the tufts, and a punch which inserts the tufts and staples into the forations. The brush back or stock after being perforated to receive the fibres is placed on a carriage, ich receives an intermittent to and fro motion transversely to the feed belts through an eccentric arranged connection with two pawls and a ratchet. The ratchet shaft operates the carriage by means of a sliding ion which allows the said carriage to move to and fro longitudinally with the belts, the latter movement ng produced by a vertical rack, which by means of a slide and spring catch is thrown into gear at the per times with a pinion which operates a horizontal rack attached to the carriage. These movements of carriage bring all the perforations in the stock successively under the inserting punch.

[Printed, 1*s*. 2*d*. Drawing.]

A.D. 1868, September 12.—N° 2816.

OMBE, James Cane, and GREGG, St. George.—(*Provisional protection only.*)—"Improvements in coating iron and steel, and protecting such surfaces from the corrosive action of sea or salt water, and the xidizing influences of damp air, wet, and moisture."

The novelty in this case consists in coating the metallic surface, heated therefor, with any of the gum ins dissolved in spirits as a priming, and then painting or varnishing the surface thus prepared.

[Printed, 4*d*. No Drawings.]

LAKE, William Robert.—(*A communication from Nathan W. Blanchard.*)—(*Provisional prote*
—" An improved substitute for hair stuffing, and mode of manufacturing the same from vegeta

I take the fibre of the soap plant and boil the same in an alkaline solution. Then, after w
drying the fibre, I twist it into a rope, then steam and dry it, and pick it into portions of t
length.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 14.—N° 2819.

BROOMAN, Clinton Edgcumbe.—(*A communication from Eugene Frederic Goguel.*)—(
protection only.)—" Improvements in the manufacture of metallic plates or blocks particularly ap
" armour for ships, forts, and other like structures."

The plates or blocks are made by heating a pile of iron or steel sheets each coated with tin, le
other fusible metal or composition, and then submitting the heated pile to pressure, whereby th
united into one solid block.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 14.—N° 2820.

SEEBOHM-ULTZEN, Frederic.—(*A communication from Haas-Demrath.*)—(*Provisional prote*
—" Improved apparatus for generating carbonic acid, applicable to beer casks and other
" preserving, raising, and transferring their contents."

This invention relates to a peculiar combination and arrangement of apparatus, consisting
vessel containing muriatic acid and placed at a considerable altitude, and communicating by a tu
in two parts, joined by india-rubber tubing provided with a compressing valve) with a closed
vessel containing marble or pure lime. This vessel has an opening provided with a valve and c
which a tube leads into and descends nearly to the bottom of a second vessel containing wate
This second vessel communicates by a tube with the beer cask or other vessel, from which a
leads to the beer tap above. The different receptacles having been duly supplied and closed u
pressing valve connected to the tube leading from the open vessel is to be slowly opened, wh
acid will enter the vessel containiug marble or lime, immediately dissolving the latter and thereby
carbonic acid.

The muriatic acid entering in this manner the production of carbonic acid will continue until t
of the carbonic acid balances the weight of the column of muriatic acid, which constantly re
action of the apparatus during the opening and closing of the tap from time to time. The pr
produced on the surface of the beer in the cask is sufficient to force the beer out of the cellar i
tap. The carbonic acid filling up so much of the interior of the cask as is not occupied by the
to preserve and improve the latter by preventing its contact with atmospheric air, and also
operation of tapping or drawing) prevents the escape of the carbonic acid naturally contained in

[Printed, 8*d*. Drawing.]

A.D. 1868, September 14.—N° 2822.

SOUL, Matthew Augustus.—(*A communication from Christian Johann Heinrich Carl George August and William Walter James Mornington.*)—" Improvements in spring pendulums for chronometers and clocks."

The chief feature of novelty in this invention is so constructing the pendulum as to give it an uniform power, rendering it independent of the works and propelling weights, and so that any irregularity in the works shall not exercise a direct influence on the pendulum to produce variations in the oscillations. This is effected by the peculiar construction of the pendulum with two or more springs, which are alternately stretched or put into a state of tension by means of other parts of the pendulum, and thus impart to it their power, and as the degree of tension is uniform, the oscillations are always uniform.

[Printed, 10*d.* Drawings.]

A.D. 1868, September 14.—N° 2823.

PINFOLD, Jonathan Dumbleton.—" Improvements in machinery or apparatus for grinding grain, and " in the means for driving or actuating the same."

This invention consists in combining stone runners with fixed chilled metal plates, and in driving the same through a friction wheel to prevent breakages.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 14.—N° 2824.

HETHERINGTON, Joseph.—(*Provisional protection only.*)—" Improvements in or applicable to machines " for winding yarn or thread."

It consists in combining with ordinary winding mechanism arrangements for distributing the yarn or thread, so that it may be wound upon the bare spindles or on paper or other tubes, placed upon the spindles in the cop form, the said arrangements of mechanism being similar to the reciprocating or rotary shaper mechanism used in self-acting mules.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 14.—N° 2825.

TURNBULL, Henry John.—" Improvements in preserving and keeping clean the bottoms of iron ships, " and also iron submerged, and iron structures exposed to the action of the atmosphere or water."

The novelty in this case consists in coating the surface of iron first with a " priming " made of pine varnish, resin, and gutta percha mixed in certain proportions, and then coating these with a composition containing phosphorus, bisulphuret of carbon, shellac, and benzoin.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 14.—N° 2826.

FENWICK, John.—(*Provisional protection only.*)—" Improvements in the construction of annealing ovens " and kilns."

The pots or saggars containing the metal or other goods to be annealed or fired are placed on fire-proof carriages, which are run into the oven upon a fire-proof turntable, which forms the bottom of the oven or kiln.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 14.—N° 2827.

HEWES, Joseph.—(*Provisional protection only.*)—" An apparatus for day or night advertising on land or " afloat."

This novel apparatus with telescopic rotary cylinders or polygons coil and uncoil diagonally (by self-acting motion) on their circumferences a long band printed on both sides. The top is surmounted with an illuminated lantern and vanes arranged to shew a great number of advertisements night or day, on land or afloat.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 14.—N° 2828.

CLARK, Alexander Melville.—(*A communication from David Perret.*)—" Improvements in apparatus " for drawing off or bottling liquids."

The apparatus consists of a cock and bung fitted in the cask, through which passes a tin or india-rubber tube. The cock is provided with a series of nozzles, to which are attached india-rubber tubes made rather longer than an ordinary bottle, into which they are introduced, s^d bottles being adjusted to a level with the bottom end of the tube in the cask by means of a screwed support, so that the supply is cut off on the liquid in the bottles reaching such level, the supply being also kept up until the whole is withdrawn from the cask. The supply from one or more of the tubes is also cut off by compressing them in the spaces made in a kind of rack formed on the cock.

I also modify an ordinary syphon for producing the same self-acting supply by the addition of a small air tube fitted in one limb of the syphon, the orifice being at its lower end, at which point the flow is arrested. Several casks may be drawn off simultaneously by providing each with a tube similar to the above, terminating in a kind of nozzle, to which is attached an india-rubber tube passing to a bottling apparatus.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, September 15.—N° 2829.

VICKERS, EDWARD.—(*Provisional protection only.*)—" Improvements in the manufacture of hats and caps " and other coverings for the head."

This invention consists in improvements in the manufacture and preparation of the foundations and bodies of hats and caps and other coverings for the head. The material employed is paper, pasteboard, or cloth, or any material or combination of materials adapted for the purpose. It is first coated with size and water, then dried by artificial heat, and having been soaked in or damped with water is saturated with soft soap and water, and finally blocked into the desired shape.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 15.—N° 2830.

ABEL, CHARLES DENTON.—(*A communication from Jacob Rothberger.*)—" Improvements in the means " and apparatus for securing buttons to articles of dress."

This invention consists in providing the buttons with a tubular shank having a shoulder, which shank is held between two jaws connected together by a spring while it is secured to the article of dress. For this purpose a point is inserted into the tubular shank, over which the article of dress is pushed on to the shank. After removing the point the end of the tube is rivetted down by a punch.

[Printed, 8*d.* Drawing.]

A.D. 1868, September 15.—N° 2831.

BENSON, MARTIN.—(*A communication from James Riley Maxwell and Ezra Cope.*)—" Improvements in " steam pumping machinery or engines."

A portion of our improvement consists in constructing a steam engine with a cylinder and piston suited to each other, so that the piston will perform the functions of a valve in opening and closing the ports of steam passages. When accomplished by making the piston as much longer than the stroke as is required to cover the steam ports at each end and centre of the cylinder alternately when in operation; also in the arrangement of steam passages to the interior of such a piston as before described, wherein a main piston valve is so arranged with its steam passages and cavities as to properly communicate with the passages in the piston to change and direct the flow of steam alternately on each end of the piston to produce the reciprocating motion of the piston without external valve gear.

Another portion of the improvement consists in arranging the water passages and valves in the pump portion of the machinery so that the suction and delivery pipes can be attached to either side of the pump and all the valves got at for repairing, cleaning, or other purposes by removing the air chamber or plate to guard and retain them to their seats, and without breaking and renewing pipe joints.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, September 15.—N° 2832.

SARJEANT, ENOCH.—" Improvements in the manufacture of gaseliers, gas pendents, gas brackets, gas standards, and other gas fittings."

This invention consists in joining or connecting together the tubes, bodies, stop-cocks, and other parts of gaseliers and the other articles enumerated by the process of casting in metal or chill moulds, and at the same time leaving a gas way between all the tubular parts, instead of joining the parts together by brazing or screwing or rivetting as is usual.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, September 15.—N° 2833.

JEWITT, HENRY.—(*A communication from William W. Rose.*)—(*Provisional protection only.*)—" A new toy " representing game cocks or other birds or animals in the act of fighting."

ds or animals are hung on a pivot actuated by wires in such manner that they shall be projected : from each other when the operator pulls or pushes the ends of such wires.

l, 4*d*. No Drawings.]

A.D. 1868, September 15.—N° 2834.

GUE, CHARLES.—" Improvements in gas cooking stoves."

)aratus constructed with a separate combustion chamber, so as to heat and pass hot air into and ooking chamber, either on the upper side of article to be cooked when horizontal or nearly so, ı sides of it when inclined with the flame, so disposed as to be out of the way of grease or other

l, 10*d*. Drawing.]

A.D. 1868, September 15.—N° 2835.

FRANCIS.—" Improvements in sweeping machines and in excavating machines."

ovisional Specification describes a sweeping machine suitable for being fixed at the back of a cart the material collected, and further supported by a pair of road wheels. Rings of teeth on these ve the working parts of the machine, which consist of an endless chain of sweeping brushes and elevating apron. An arrangement for throwing the brushes out of gear is described.

ıe arrangement is applicable to an excavating machine, teeth being substituted for the brushes.

l, 1*s*. 4*d*. Drawings.]

A.D. 1868, September 15.—N° 2836.

IT, JOHN HENRY.—" Improvements in the construction of pianofortes, violins, guitars, organs, er similar musical instruments."

ovisional Specification describes making the sound boards of pianofortes of alternate plates of hard ıaterial; for example, of beech and poplar woods, or it may be of others. The same arrangement licable for the construction of parts of violins and guitars. Organ pipes may also be similarly d.

l, 8*d*. Drawing.]

A.D. 1868, September 15.—N° 2837.

N, WILLIAM, and HALL, GEORGE.—(*Provisional protection only.*)—" Improvements in means ratus for washing or bleaching various articles."

vention consists in the employment of a suitable vessel in which is fixed a false bottom perforated mber of holes. In the centre of the vessel is fixed a pipe, by preference of a conical form, the being fixed at the bottom. In the lower part of such pipe suitable openings are made, and at part thereof are fixed branch pipes having suitable openings therein. The articles to be washed d are arranged on the false bottom, the top of the vessel is then closed, and heat is applied in any ıanner to the bottom thereof.

ed, the articles to be washed or bleached may from time to time be shifted in position, or the pes may be caused to revolve by the passage of the water therethrough or in other suitable

l, 4*d*. No Drawings.]

A.D. 1868, September 15.—N° 2838.

DSON, JAMES.—" Certain improvements in the method of fastening or securing the metallic sed in packing bales."

velty of the invention consists in punching or cutting pieces partly out of each end of the hoop, ertures are made in the hoop, and the pieces which come out of the apertures remain attached to nd are bent slightly outwards.

re formed in reverse directions at each end of the hoop, so that one series of bent pieces or " claws " d enters the openings at the other, and vice versâ, which constitutes a double hold or fastening king, and secures the two ends together.

l, 8*d*. Drawing.]

A.D. 1868, September 15.—N° 2839.

GEORGE.—(*A communication from James Fowle Baldwin Marshall and Augustus Jones.*)—(*Provitection only.*)—" An improved machine for hulling and cleaning or polishing coffee, rice, and rain."

A.D. 1868, September 15.—N° 2840.

MARTIN, Robert.—" An improved apparatus for scraping and otherwise cleaning boots and sho
The invention consists principally of a combined scraper, door mat, and brush, to be used
passages, and other places, for scraping and cleaning the boots or shoes of persons entering such pl
The apparatus is composed chiefly of a shallow box or frame (preferably of wood) in which ar
edge any convenient number of strips of vulcanized india rubber secured between narrower strips
which are firmly fixed in the wooder or other box or frame.

At each side of the box or frame is a raised brush with the bristles inwards, which serve to h
sides and edges of the boots or shoes; and in some instances, where a larger apparatus is req
propose also to place a double brush in the centre, so that both sides of the boot or shoe may be cl
a time.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 15.—N° 2841.

ROOKER, Alfred.—" An improvement in curtain rings."

Opposite the point of attachment of the curtain hook the ring is provided with one or more
rollers, balls, or circular discs, to diminish friction and noise.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 15.—N° 2842.

LAKE, William Robert.—(*A communication from Frederick Woolcot Armstrong.*)—(*Provisional pr*
only.)—" An improved covering for walls, ceilings, and other surfaces."

In practicing the said invention I take thin sheets or laminae of wood, which may be cut from a
turning or by any other suitable process. To one side of such thin laminae I apply paper pulp
of paper cloth or other textile fabric, the two materials being closely united by pressure or by th
vention of any adhesive substance. The compound fabric thus produced is ready for use, and
applied to the wall or other surface in any ordinary and convenient manner. The prepared co
sheets or laminae are most conveniently kept in rolls, and before unrolling them, preparatory to a
them to the walls or other surfaces, they should be moistened. I roll up the sheets with the wood
outward and lengthwise of the grain of the wood, that is to say, the grain of the wood should run
the roll.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 15.—N° 2843.

HEUSSER, Edward. — (*Provisional protection only.*) — " Improvements in fastenings and lo
" travelling bags, pocket books, writing cases, and other receptacles."

A sliding plate on the upper or outer side of the mouth, jaw, or other convenient part of the ar
be fastened carries a pin or stud, which projects downward or inward, and engages or is connected
bolt or plate having hooks, notches, or other contrivances, which engage with proper appliances
other jaw, side, or part of the article to be fastened. This bolt is moved to fasten and unfasten th

by turning the key. Instead of notches there may be pins or projecting stops. Springs may be restore the bolt and plate to position after having been moved.
ted, 4*d*. No Drawings.]

A.D. 1868, September 15.—Nº 2844.

AM, William.—" An improved mode of preserving or protecting from corrosion wire webs and er plates used in the manufacture of paper."
eature of novelty which constitutes this invention is the connecting of a piece of metal which is ositive to the wire webs or strainer plates, the metal being immersed in the fluid pulp and connected p of copper to the wire webs or strainer plates to be preserved, and by this means an electric current rom the electro positive metal through the pulp to the wire or plate, all the chemical action being upon the electro positive metal, while the wire or plate being electro-negative is completely d.
ted, 8*d*. Drawing.]

A.D. 1868, September 15.—Nº 2845.

)N, Richard.—(*Provisional protection only.*)—" An improved construction of punching machine." nvention relates to the automatic punching in iron plates and other articles of holes at equal and r distances apart, the punches used being capable of being thrown into and out of action at the of the operator or attendant.
ted, 4*d*. No Drawings.]

A.D. 1868, September 16.—Nº 2846.

RD, Charles, and HARMONY, Manuel Ximeno. — (*Provisional protection only.*) — " Im- ments in the means and apparatus for preserving meat, fowls, fish, eggs, fruit, vegetables, and animal or vegetable matter."
invention consists in impregnating meat, &c., with a gelatinous solution containing bi-sulphite or equivalent substances, for which purpose the meat, &c., is placed inside an air tight receptacle, ich the air is first exhausted and the solution is then forced in. The meat, &c., is afterwards n a similar solution containing glycerine or equivalent substances, and it is then dried.
ted, 4*d*. No Drawings.]

A.D. 1868, September 16.—Nº 2847.

, Joseph, and GEER, Thomas.—" Improvements in the method of and apparatus for cutting lges of books, which apparatus is also applicable for cutting the edges of note paper, and for other r uses."
raming of the machine supports in vertical slides the cutter frame in which the knife is adjust- means of two screws actuated by a hand wheel and suitable gearing. The knife (which may be at any time to suit the size and form of book to be cut) is made of a rectangular shape forming les of a parallelogram sharpened at its lower edge and of a sufficient depth to cut through the thickness. This knife is fixed below the cutter frame, and in the interior thereof is a movable " which is pressed downwards by two adjustable springs. The table on which the book to be id is faced with lead or other suitable substance, and is provided with two adjustable guides to he proper position of the book beneath the knife.
utter frame carrying the rectangular knife is caused to rise and fall by means of two eccentrics or ounted on a shaft below the table and actuated by a spur pinion on the driving shaft gearing into nal spur wheel mounted on one end of the cam shaft. The driving shaft is provided with a fast ose pulley, and the fork for moving the driving strap from one to the other is attached to a sliding ected to a weighted lever.
ted, 10*d*. Drawing.]

A.D. 1868, September 16.—Nº 2848.

)CKS, John.—(*Provisional protection only.*)—" Certain improvements in looms for weaving."
ovelty of the invention consists in constructing a vertical slot in connection with the [*crank of rect through the centre of the**] crank shaft, into which a sliding bar is placed and from which two studs, the lower one being governed in its motion by the ordinary " scroll " or spiral cam

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ords " crank of looms direct through the centre of the " are found in the copy of the Abridgment delivered by the , but do not appear in the original Abridgment.

employed for giving motion to the "picker" causes the upper stud with each alternate pick to come into contact with the stud on the picking stick through and by which motion is given to the shuttle.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 16.—N° 2849.

GREENWOOD, Frederick Francis.—"Improvements in fastenings in the nature of buckles."

My invention consists in the construction of a "lock buckle," that is to say, a buckle the tongue of which shall be capable of being locked upon or into its frame.

[Printed, 6*d.* Drawing.]

A.D. 1868, September 16.—N° 2850.

SAMSON, George Robert.—(*Provisional protection only.*)—"Improvements in the construction of "pianofortes."

The novelty of this invention consists in the entirely new mode of constructing those parts of piano-fortes known as the bark sound board and wrest plank or tuning place, and the mode of attaching the strings by passing them through the piano-forte up at the bottom of the sound board, the centre of each string pulling up against a bridge at the opening at the bottom of the sound board, the ends of the strings being attached at the top of the piano-forte to the wrest plank, one end in front of it and the other end behind it, either to a tuning pin or other pin, in lieu of the ordinary mode of attaching the strings to two pins in front of the piano-forte.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 16.—N° 2851.

WALMSLEY, John.—(*Provisional protection only.*)—"Improvements in means for establishing a communication between the guards and the 'drivers' of railway trains, and between the guards and the passengers "in the said trains."

In this invention the carriages of railway trains are provided with speaking tubes, the said tubes being preferably formed of metal, and the tubes of one carriage being connected to those of another by lengths of flexible tubing provided with suitable couplings. The guard's van at the tail of the train is fitted with a mouthpiece, and the engine and tender with a corresponding mouthpiece, in order that verbal messages may be transmitted between the guard and the driver of the train. In the case of the train having a second guard's van a second system of tubes is sometimes provided, enabling the guard in the second mentioned van to speak to the driver on one side and to the tail guard on the other. If a communication between the guard or guards and the passengers is required, it is preferred that a seperate system of tubes shall be employed, communicating with the said guard or guards, but not with the driver. A modification of the ordinary conical joint coupling is sometimes employed for the purpose above named.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 16.—N° 2852.

MARRIAN, Henry.—(*Provisional protection only.*)—"Improvements in weighing machines."

This invention has reference to platform weighing machines, and has for its object to indicate upon a divided or graduated scale the total value of the weights employed to balance the goods or articles to be weighed. This is effected by making the weight bar in two parts, the upper part being hooked to the weighing machine and the lower part carrying the weights, the said two parts being connected together by a spring. When the weights are placed upon the lower bar the spring described is made to change its figure and to cause an index finger to traverse a divided scale and indicate thereon the amount of the weights used. This invention may be applied to other part of the weighing machine instead of to the weight bar.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 16.—N° 2853.

DE MASY, Joseph.—"Improvements in cases for holding railway tickets and in mechanism for withdrawing "railway tickets from the said cases."

According to this invention the case is divided into compartments, each containing a pile of tickets. In front of each compartment is a vertical slot, the bottom only of which is made of a width proper to permit one ticket to pass out. Underneath each compartment is a slide carrying a projection, which projection works in a slot in the bottom of the case and projects above the said bottom. By drawing the slide outwards by a thumb plate at its front, the lowest ticket of the pile is withdrawn by the projection of the slide. On loosing the thumb plate the slide retires by the action of a spring and the

ticket rests on the thumb plate. By grasping the thumb plate and ticket the slide is again
and by relaxing the pressure the ticket is held and the slide retires. A second ticket is
on the thumb plate, and by withdrawing the second ticket a third is left protruding, and so on.
d. Drawing.]

A.D. 1868, September 16.—N° 2854.

LEXANDER MELVILLE.—(*A communication from Felix Gruet and Frédéric Gruet.*)—(*Provisional*
ly.)— "Improvements in electro-magnets."

ovements relate to means of increasing the power of electro magnets, which I effect by com-
mber of them with their poles alternately reversed in position.

ets are mounted on a soft iron plate at one end, and at the other in a copper plate, their
wer being caused to act on a soft iron plate applied to the copper plate above mentioned.

' these apparatus may be superposed if desired.

d. Drawing.]

A.D. 1868, September 16.—N° 2855.

GEORGE BRERETON.—"Improvement in the construction of fire-grates."

visional Specification describes forming fire grates with moveable grates or fire holders to
suitable recess between the cheeks, the movable grates or fire holders being provided with
supported on wheels, so that they may readily be removed from a room to be emptied and

ification also describes forming fire grates with two fronts, so that the fire may serve for two rooms.

d. Drawing.]

A.D. 1868, September 16.—N° 2856.

JOHN BERGER, and KELLY, RICHARD ROPER.—(*Provisional protection only.*)—"A new
ure of pigments."

ntion relates to the use of the waste iron arising from the purification of illuminating gas as a
lso for the same purpose the use of pyrites when the sulphur has been driven off for the
of sulphuric acid.

d. No Drawings.]

A.D. 1868, September 16.—N° 2857.

ILLIAM.—"Improvements in machinery or apparatus for capsuling bottles, jars, and other like
s."

closing metallic capsules on to the necks of bottles and other like receptacles by the aid of
etal segments which simultaneously grip the capsule by the action either of springs or by the
the hand of the workman. These segments or "shapers" are made to suit the particular make
d are of a length sufficient to cover the whole of that portion of the capsule which extends behind
or lip of the bottle neck.

0*d.* Drawing.]

A.D. 1868, September 16.—N° 2858.

R.—(*Provisional protection not allowed.*)—"A combination pulverizing plough."

lty of this invention consists in elevating the soil by means of an inclined trough connected
ugh shear, and pulverizing and scattering the said soil by means conveniently arranged for that
lso when desired combining with such plough means for dibbling, sowing, or planting seed in
repared, with the finishing operation of covering over the seed and rolling down the soil.

d. No Drawings.]

A.D. 1868, September 16.—N° 2859.

LLIAM ROBERT.—(*A communication from George H. Hawkins.*)—"Improvements in the manu-
heads for dolls and for other toys."

tion relates to dolls' heads and heads for toy human figures or animals. I employ as a stock
a textile or felted fabric or cloth formed by weaving, felting, or other process, which fabric is
en heated in any proper manner, the dies used giving the proper configuration to the head,
at dries the cloth, so that it will permanently retain the configuration thus given to it.

is moulded in two separate parts by two pairs of dies, and the said parts are afterwards lapped
e lapped surfaces being slightly moistened and united by pressure.

d. Drawing.]

their proper position for work, and then forcing the tiller against the same. Another part of t
consists in placing two studs at the back part of the body or frame of the plough, whereby the
share is regulated and fixed and prevented from getting loose in its gear. The invention fur
in the adaptation of a self-acting furrow wheel to turn-wrest ploughs. This wheel is connec
stem or shaft of the small wheel of the plough, and requires no rod to turn it, but swings
furrow under the beam by its own weight.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 17.—N° 2862.

WATTS, William Thomas.—"Improvements in annealing raised hollow vessels."

This invention refers to enclosing the article to be annealed within suitable hoops, dies, or
control its expansion and prevent cracking during the process.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 17.—N° 2863.

NEWTON, William Edward.—(*A communication from Henry Clark Sargeant.*)—" Impro
" apparatus for raising water and other fluids."

A pair of cylinders, the pistons of which are on the same rod, are mounted horizontally abo
supply pipe provided with inlet valves to admit water to a chamber, from which it is expelled on
stroke.

[Printed, 1*s*. Drawing.]

A.D. 1868, September 17.—N° 2864.

CAMPBELL, Alexander Francis.—"Improvements in the construction of ships for carrying
" merchandise, fish, cattle, iron, wine, and cargo of all kinds at sea and in rivers, such improven
" applicable in part for war and other ships."

The chief features of novelty in this invention are,—

I. The severance of the motive power from the carrying capacity by employing a different vess
designed and constructed for each, the cargo vessel C to be in tow by a rope or chain, which ca
taneously detached so as to ensure safety to either vessel in case of accident to one at sea.

II. The adaptation of the cargo vessel by internal and external arrangements to the partic
which it is to be applied, whether for commercial, warlike, or other purposes, and the rendering
such vessels unsinkable by hermetically closing them where the nature of the cargo, such as wo
coals, admits of it.

III. A compresser for gripping or releasing instantaneously the tow rope.

IV. The adaptation of the improved vessels C for laying electric cables at sea.

V. The introduction of electric wires into the tow rope, or the use of a separate telegraphic rop
maintain communication between the two vessels.

[Printed, 2*s*. Drawings.]

osive projectiles, sugar may be used instead of the sulphur, and ferro-prussiate of potash may be
To render the powder self explosive I saturate the same with a liquid consisting of phosphorous
ulphide of carbon. I sometimes omit the charcoal from the compound, leaving only the chlorate of
nd sugar. This compound is self explosive when saturated with the liquid. When consisting of
of potash and charcoal, or chlorate of potash alone, the powder when saturated with the liquid is
losive after a certain interval of time.

ted, 4*d*. No Drawings.]

A.D. 1868, September 17.—N° 2866.

N, **Henry.**—" Improvements in engines worked by hydraulic, fluid, or steam power, and in
anism or apparatus used in regulating the supply of water or other fluids, the same being applicable,
gst other uses, to waterclosets, lavers, and gas pipes for prevention of waste of water, gas, or other
."

sting of a cast iron cylinder, piston, and water passages and ports and peculiarly formed slide valve
ged as to regulate the supply of water from the mains.

improvements are also applicable to engines and gas regulating apparatus.

ted, 2*s*. 2*d*. Drawings.]

A.D. 1868, September 17.—N° 2867.

I, **George Harman.**—" Improvements in apparatus for administering and supplying and purifying
or vapours for medicinal and other purposes."

invention consists in a novel method of purifying gas or vapour when used for medicinal purposes,
s economising the cost by allowing them to be re-breathed or re-inhaled after having been already
and returned to the gas holder. This is effected by placing net work within the gas holder, and
it to be saturated with some chymical solution which can absorb impurities contained in the gas or
which is returned to it. The chymical solution is contained in a vessel secured on or in a core
by the gas holder. Whenever gas or vapour is taken out of the gas holder it descends and the
becomes saturated; when gas or vapour is admitted the gas holder ascends and the gas or vapour
ed by passing through the insterstices of the net work. The same method of purifying gases will
r other than purely medicinal purposes.

ted, 4*d*. No Drawings.]

A.D. 1868, September 17.—N° 2868.

, **Thomas, JONES, Joseph, BRANDWOOD, James,** and **WREN, John.** — " Certain improve-
in furnaces, applicable to boilers for generating steam or other purposes."

ovelty of the invention consists in the adaptation and use of hollow fire-bars terminating at the
xtremity or back of the furnace in a chamber, which is perforated and extends upwards nearly to
of the flue, between which and the top of such chamber the smoke from the fire passes. The air
e aperture provided beneath and at the front end of the fire-bar, and passing along the bar becomes
nd thence passes into the chamber and out at the perforations thereof into the flue, where it becomes
ith the smoke and assists in the burning or consumption thereof.

ted, 8*d*. Drawing.]

A.D. 1868, September 17.—N° 2869.

ON, **John Henry.**—(*A communication from Clement Sauvage.*)—" Improvements in the com-
n of liquid fuel, and in the furnaces and apparatus employed therein."

ng liquid fuel without admixture of steam or water upon a grate placed either vertically,
ally, or at an inclination, each grate bar being channelled longitudinally for the flow of the liquid
g it. This air enters between the bars, and is regulated by a damper. Each bar is supplied with
el from a separate pipe, and all the pipes are fed from one common regulator, which receives the
el from a suitable tank or receiver.

ed, 10*d*. Drawing.]

A.D. 1868, September 17.—N° 2870.

ON, **John Henry.**—(*A communication from Noel Auguste Sustrac.*)—" An improved mode of
izing, and improved envelopes to be used therein."

nvention consists of a mode of advertising by the aid of envelopes, paper bags, bands, wrappers, and
r newspapers or book post, and letter or note paper having advertisements printed thereon, whereby

the cost of manufacture of such envelopes, wrappers, or letter paper, and the cost of the postage stamp which may or may not be affixed or formed thereon, may be wholly or partially covered by the charges for the advertisements they contain, and hence such envelopes, wrappers, or letter paper may be retailed at a minimum price. It is further proposed, in order to increase their available advertising surface, to combine with envelopes an additional piece or strip of paper more or less ornamented or left plain if preferred, which is to be cemented inside the envelope and doubled or folded therein, and with a view to prevent the tearing of such advertising sheet when opening the envelope (the exterior of which may present the ordinary appearance), the three flaps are united under the seal or gummed flap, an opening being made in the opposite flap to the seal flap so as to afford access for the gum on the usual gummed flap to the ends of the other flaps below. The accidental tearing of the additional advertising sheet or slip contained in and secured to the envelope or wrapper may be further prevented by making a portion thinner than the rest, thereby insuring the opening of the envelope or wrapper along any given line or contour.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 17.—N° 2871.

SMITH, Robert.—" Improvements in the means employed for preventing the fouling of iron and other " ships' bottoms."

I prevent the fouling of iron ships' bottoms or of ships sheathed with zinc or copper, by what I term the atmospheric remedy.

I place a pipe along one or both sides of the keel, stem, and stern post, containing a compound of sulphur, rosin, and fish or other oil in about equal proportions, which generates a vapor or gas (capable of destroying all animal or vegetable life liable to foul the ship's bottom) passing out through perforations in the pipes and mingling with the air in the water. To facilitate the action of the gas or vapor a quantity of lime or chalk is placed, if desired, in the pipes in alternate proportions with the compound, or the lime or chalk may be applied on the ship's bottom by rubbing, and the compound also applied by the aid of a brush if desired.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 17.—N° 2872.

CLISSOLD, William.—" Improved machinery for feeding wool and other fibres to preparing and " carding machines."

Near the mouth of a box I mount a rotary comb, behind which I set a grid transversely to the box and with its spaces in the planes of motion of the comb teeth. These teeth as they rotate will take hold of the fibres at the back of the grid and draw them down past a rotary gill which assists in carrying the fibres forward to reciprocating bars which deliver them to reciprocating combs situate at the mouth of the feed box.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 17.—N° 2873.

HEAD, John.—(*A communication from William Archibald Murray.*)—" Improvements in constructing " wire fences and in apparatus used therein."

This Provisional Specification describes straining the wires of wire fences by apparatus applied to the wires themselves so that the straining apparatus and the posts are independent one of the other. The apparatus employed is composed of a rectangular frame, in the centre of which is carried a small windlass barrel through which the wire is passed.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 18.—N° 2874.

HUDSON, Charles Henry.—" Certain improvements in washing apparatus."

The features of novelty which constitute the invention are,—

First, a wash box or tub capable of being folded together into a small compass.

Second, a rubber, consisting of a rigid box in which are hung two or more rollers, and which is furnished with a suitable handle for rubbing the clothes upon a common washboard.

Third, a swinging frame supported on suitable bearings, to which frame the said rubber may be hung.

Fourth, a frame to be clamped or secured to the tub, in which frame are bearings for the said swinging frame, And,

Fifth, two posts secured to the sides of a common washboard, in such a manner that they may be folded down out of the way, and provided at their upper ends with bearings for the said swinging frame.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, September 18.—N° 2875.

ES, **Edward Thomas.** — (*A communication from Charles Henry Hudson.*) — "Improvements in
ing machines."
eatures of novelty which constitute the invention are,—
the use of one or more endless bands or belts of india rubber hung on rollers, between which the
are wrung or squeezed dry.
nd, the arrangement of one or two endless belts of india rubber and four rollers in such a manner
clothes will be wrung or squeezed twice in passing through.
l, the combination with one or two endless india rubber belts and three or four rollers of cog wheels
ing wheels on two of the said rollers, which are hung in stationary bearings, which cog wheels mesh
h other to drive the belts.
h, arranging the said rollers in such positions relative to each other that the wringing shall take
tween a stationary and a movable roller, and not between two stationary rollers.
, the combination with or application to said endless bands of tightening rollers.
, the combination with a wringer of two jaws or prongs, and a wedge for securing the wringer to
or wash box.
nth, a spring made by inserting radially at proper angles relative to each other bars or rods of elastic
steel in a metallic centre piece. And,
h, a packing of felt or other suitable yielding substance applied to the rolls when articles of a bulky
re to be wrung.
ted, 1*s*. Drawings.]

A.D. 1868, September 18.—N° 2876.

, **William.**—"Improvements in carriage door stops."
rubber spring, combined with hinge, to prevent the door handle striking against the carriage body.
ted, 10*d*. Drawing.]

A.D. 1868, September 18.—N° 2877.

TTART, **Henrietta.**—"Improvements in the construction of screw propellers."
uter edges of the blade are curved or bent round to coincide with a line set off from the lines of the
nd corresponding with the speed of the vessel.
ted, 10*d*. Drawings.]

A.D. 1868, September 18.—N° 2878.

, **William.**—(*Provisional protection not allowed.*)—"Manufacturing spring boots for horses."
adding of elastic materials, either hair, feathers, sponge, cork, woollen or linen substances, or a
tion of any or all of these, or of air inflated through a small tube, or india rubber or any other
ubstance applied either outside or inside the boot, and in connection with or separated from it, and
le so arranged as to protect the back sinews, tendons, ligaments, and shin bones.
ted, 4*d*. No Drawings.]

A.D. 1868, September 18.—N° 2879.

ELHOFF, **Eduard.**—"A potatoe planting machine."
invention consists of a series of "elevators" mounted on a suitable frame carried on wheels, the
vators conducting the potatoes from the hoppers to the planting tubes in regular succession.
ted, 10*d*. Drawing.]

A.D. 1868, September 18.—N° 2880.

ES, **Edward Thomas.**—(*A communication from the Incorporated Society of Mirror and Glass*
.)—(*Provisional protection only:*)—"Improvements in apparatus for grinding, smoothing, and
ing glass, marble, and other similar substances."
invention consists of a truck carrying a revolving table on which the plate of glass or marble is
the grinding, smoothing, and polishing wheels being successively caused to rotate thereupon until
ssary operations are complete.
ted, 4*d*. No Drawings.]

A.D. 1868, September 18.—N° 2881.

NEEDHAM, William, and KITE, James.—" Improvements in machinery or apparatus for depurating " fluids."

This invention consists in obtaining even surfaces on both sides of the supply chambers of filtering presses or depurating apparatus with the object of applying paper as a filtering medium.

The perforated plates or diaphragms of the supply chambers are not recessed in the frames, but extend on all sides between them and the frames of the discharge chambers. A filtering cloth is laid over each perforated plate, and over this any suitable thickness of filtering paper which may or may not be covered with another cloth, the whole being held between frames and diaphragms.

The supply and discharge chambers alternate, and the fluid is introduced under pressure by a conduit in the upper part of frames and diaphragms, the depurated fluid being received in a similar conduit below, so that the entire filtration is effected without exposing the fluid to the atmosphere.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, September 18.—N° 2882.

SMITH, John, and DEWDNEY, James.—" Improvements in steam boilers."

This invention consists, firstly, in extending the inner tubes of pendant tube steam boilers and fixing them in a solid plate or diaphragm some distance above the crown plate, which upper plate may have other openings with tubes rising to the steam space of the boiler. In another arrangement the outer tubes are carried up to the upper plate instead of the inner tubes, which latter are provided with a bend so as to pass through the outer tubes.

[Printed, 10*d.* Drawing.]

A.D. 1868, September 19.—N° 2883.

HUGHAN, William Henry.—" Improvements in the treatment of night soil, sewage, and other like " refuse matters for the purpose of deodorising and converting the same into manure."

The object of this invention is accomplished by the process of cementation, and what I claim to have discovered is the application of " Portland " or other suitable cement in the setting process to deodorise (where necessary) and solidify night soil, sewage, filth, in general refuse, blood, offal, urinary and bestial products of farm steadings, sludge and other refuse of manufactories, fish, and the like.

The primary object of the discovery is to utilize night soil and the contents of sewers and other like refuse matter found in large cities and towns (which substances are known to be rich in ammonia, phosphoric acid, magnesia, potash, soda, and which at present poison the air and water, and to transform them into a valuable and portable substance or manure for agricultural purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 19.—N° 2884.

BERNHARDT, George.—" Improvements in or applicable to machines for preparing, spinning, and " doubling fibrous materials."

1. It consists in applying mechanism to take off or put on simultaneously the weight or pressure acting upo leather covered rollers in preparing, spinning, and doubling machinery. 2. In arranging a traversing drag cloth in throstles, so that it is attached to the cover plate or copping rail, and has longitudinal as well as vertical movement. 3. In improvements in the doffing mechanism described in the Specification of the Patent No. 1466, A.D. 1867, viz., in using a trough to receive the full bobbins, a plate in front of the copping rail to guide the threads from the full to the empty bobbins, in gearing the rollers with a ratchet arrangement so as not to turn backward, in using a quick single square screw thread to secure the flyer upon the spindle, in dispensing with the excentric shaft for locking the spindles and using a plain shaft instead to hold down the spindles and unlatch the springs holding up the lower spindle rails; in using long warves on one side of the frame; in arranging so that the flyer hook and bobbin rails will be continuous in length; in placing the weights for the rollers between the bands driving the spindles; in arranging the flyer hook rail so as to be drawn into a recess, which can be closed to prevent the access of fly or dirt; and, lastly, in causing the copping rail to act upon a ratchet to stop the frame in the correct position for doffing. 4. It consists in modifications of the doffing mechanism described in the Specification of the Patent above referred to, so as to adapt it for doffing the "ring and traveller" throstles or doubling frames. The spindles are drawn down or the bobbins are lifted; the empty bobbins are placed in tubes partially open in front; pins are placed in or notches are formed upon the bobbins, or hooks or projections are formed on parts rotating with the spindles, so that when the full bobbins have been

scharged by the empty ones and placed over the spindles the pins, notches, or hooks will catch upon e threads (which are brought in position by suitable mechanism), when the spindles are rotated and nd sufficient thread from the full to the empty spools to secure the threads thereto.

[Printed, 1s. 10d. Drawings.]

A.D. 1868, September 19.—Nº 2885.

ERNEY, THOMAS.—(*Provisional protection only.*)—"Improvements in the construction, forms, and means of applying defensive armour, and in the forms and in the use of some parts thereof, and also in the construction and use of apparatus for effecting the above purposes for the defence of ships and other vessels, forts, batteries, and other fortifications, parts of which improvements are applicable to other purposes."

In preferred angles for interlocking parts.

In mantlets, balanced self acting or otherwise, to stop bullets.

In other mantlets, mounted or otherwise, for the same purpose.

In means of giving support and security to blocks at the top, sides, and bottom of areas of armour ocks.

In an improved system and forms of countersunk and other rivets, and of tools for the same.

In apparatus connected with loop or porthole covers, and in means of using the same, and in the use of eel in constructing moulds.

[Printed, 6d. Drawing.]

A.D. 1868, September 19.—Nº 2886.

ACDERMOTT, MARTIN.—(*Provisional protection only.*)—" A new street lamp reflector."

The novelty consists in the form and arrangement of the parts of the reflector, by which the greater part the light now projected upwards into space and lost is intercepted and reflected in the direction of the ound, thereby nearly doubling the illuminating power of the gas at present used for lighting the public oroughfares.

[Printed, 6d. Drawing.]

A.D. 1868, September 19.—Nº 2887.

AKEY, JOHN.—"Improved apparatus for stretching and repairing boots and shoes."

The object of this invention is to stretch boots and shoes more effectually than is now done, as well as to enabled to repair the same when "pegged" with greater facility.

or these purposes a metal last is used in lieu of wood, the upper portion being in halves hinged together he heel part. The sole part is divided into three parts, one part being the heel and waist portion conted by a hinge with one half or portion of half of the sole, the remaining portion of the sole fitting gside the same, its heel end resting upon the heel portion of the hinged part referred to. A screwed is passed through a tapped hole in such resting heel portion, and its pressure upon the hinged heel en in use) stretches the instep of the boot or shoe.

similar bolt passing diagonally through the heel, but higher up and along the length of the last interr (the same being recessed, as is usual in wooden lasts), and with the usual fittings expands the same ally.

he last being of iron or other suitable metal is readily adapted for the repair of "pegged" boots or s.

oles may be drilled in the sides of the last for the reception of the usual "forms" when it is required to the boot or shoe for corns or bunions.

Printed, 10d. Drawing.]

A.D. 1868, September 19.—Nº 2888.

ER, FREDERICK.—"Improvements in the method of and apparatus for supplying bath rooms and other arts of dwelling houses and similar buildings with hot water."

he invention consists of the use of a tubular fire back or coil of pipes in any form or shape for heating water bath rooms or for use in any other part of dwelling houses, the use of a cylinder as a reservoir for hot water, the manner of connecting it with an upper and a lower pipe to the tubular fire back. This cylinder is plied with cold water direct from the cistern at the top of the house. The hot water is supplied from the nder by a hot water pipe leading from the top of the cylinder. A return pipe is used by which the colder ter is drawn from the hot water pipe to the cold water pipe, or to the cistern direct if preferred. The cold ter is prevented from rising in the return pipe by the use of a valve in the return pipe. An expansion pipe leading from the top of the cylinder to the cistern affords a means of escape for the overheated and expanded water in the cylinder.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 19.—N° 2889.

HAYNES, William.—" Improvements in machinery or apparatus to be used in the several processes of " dressing leather."

A revolving cylinder formed of bars of a V shape and having a door for the admission of the leather goods is hung in bearings in a suitable vat, and is raised and lowered into the liquors by pinions and racks as required.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 19.—N° 2890.

BROWN, John.—(*Provisional protection only.*)—" Improved means or apparatus for extracting water or " other liquids from raw material or manufactured goods of wool, cotton, silk, flax, or other fibrous " materials."

The materials are placed in a vessel with an air tight cover, and the liquids contained in them pumped out of the said vessel.

A tap is applied to admit air under the cover after the water or liquid has been extracted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 19.—N° 2891.

DESENS, Louis.—(*Provisional protection only.*)—" Improvements in the construction of miners' safety " lamps."

The wick holder (a small tube moving up and down in the interior of a cylindrical tube by means of three small teeth gearing with an endless screw for regulating the wick) is put out of gear with the screw by means of a detent fixed at the side of the gallery surrounding the entrance to the body of the lamp.

This detent is acted on by a piece of metal fixed on the upper part of the lamp bearing the glass; in screwing the lamp to this piece the detent gives way; but a contrary effect is produced in unscrewing, for the lower end of the detent being furnished with a small rod catches on a rib of metal soldered to the side of the cylindrical tube and causes the latter to revolve, and with it the wick holder, which has the effect of ungearing the teeth of the latter from the endless screw, and the wick and holder dropping into the body of the lamp the light is instantaneously extinguished before the unscrewing of the lamp has been effected.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 19.—N° 2892.

INNES, George.—(*Provisional protection only.*)—" Improvements in rifling machines."

I construct the bed of my machine similar to an ordinary lathe bed; upon this bed I fit a saddle or carriage, and connect the same by a suitable nut to a screw extending from end to end of the bed. Parallel with this screw I arrange a toothed rack, into which is geared a pinion fixed on a short transverse screw spindle, which is supported in suitable bearings on the travelling carriage. The latter also carries a rack which is fitted to work in a guideway extending across the top of the saddle just above the transverse spindle or shaft. This rack is connected by a nut with the transverse screw and gears into a pinion on the thrust bar, to which the tool bar is fixed, which bar is thereby caused to rotate as the carriage or saddle moves along the bed. The pitch or twist of the rifling is varied by changing the relative speed of the carriage and thrust bar, and I prefer to make these variations by changing the pinions on the said bar, though the same object may be effected by changing other parts of the gearing. The guideway of this rack is supported upon brackets formed with slots which allow the said guideway to be raised or lowered to adjust the rack properly in gear with the various sized wheels or pinions. The yoke is fitted to slide over the sides of the nut and hold the same securely without disconnecting it from the rack when the same is either raised or lowered.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 19.—N° 2893.

DICKINSON, Benjamin. — " Improvements in treating the leaves of the tea plant and other similar " materials, and in machinery and apparatus to be employed therefor."

Rupturing the vessels of the leaves of the tea and other plants to rid them of their juices by inclosing the leaves in a bag and passing the bag and its contents between a pair of rollers or upon a traversing table under a roller or loaded carriage.

olling up (cigar like) the leaves by means of a revolving endless band or belt upon which they are fed, against the upper face of which belt or band a series of rollers which are suitably mounted, so that the es come in contact with and are caused to pass under them by the forward motion of the band; or ead of an endless band and rollers, two bands revolving in contrary directions may be employed.

or twisting or curling the rolled up leaves I either employ a table mounted on a rising spindle, which is to revolve, and the leaves are placed on a portion of the table which is then raised until the leaves come ontact with the under face of the belt or band, and a partial rotation of the table is at the same time arted by the hands of the operator, when a twist or curl is produced. Or, instead of the table and the less band, two bands may be substituted, with their lines of traverse at an angle to each other, instead eing parallel or coincident.

Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, September 19.—Nº 2894.

KINSON, Benjamin.—" Improvements in withering and desiccating the leaves and flowers of plants nd other vegetable substances, and in the apparatus to be employed therein."

he apparatus for withering and desiccating the leaves of plants and other materials consists of a series rays having open bottoming of cane work or other suitable material for containing the leaves or material e operated upon; these trays are fitted over a trough or box closed at the ends, and open at the top, and tier or two or more tiers of trays fit into or sliding one into the other and on to and along the top edges he trough sides. The air employed is heated in a tubular or flued vessel or chamber, or in a close stove urnace having "gills." The air is driven into and through the heater by means of a fan driven by hand ther power; and the trough, having the trays over it, is connected at one end by means of a pipe or flue he heater, and the hot air is discharged under the lower or lowest series of trays, and after passing through contents of the lower series of trays passes through the contents of the next above and then escapes.

he positions of the trays (with their contents) are changed from time to time as may be found by erience to be necessary during the progress of the treatment,

Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, September 19.—Nº 2895.

VIE, Nedrick, and MILLER, William.— (*Provisional protection only.*) — " Improvements in paratus for the manufacture of oakum, tow, and similar materials."

carrying out the invention a feed roller driven at a suitable speed and pressed forward by screws, ts, or springs, revolves nearly in contact with a concentric cavity formed in the outer lower edge of a which lies over or round a portion of the teasing cylinder. The fibrous substances are entered in en the feed roller and the cavity, and are held completely so as to be gradually and entirely disintegrated e teasing action.

e covering plate may be fitted with brushes on the surface facing the teasing cylinder, and it may be n position by springs or weights so as to yield when hard or improper substances happen to enter en it and the cylinder.

the case of tarred ropes, tar oil or other suitable oil is applied in any convenient way to the pins of the g cylinder to lubricate and clean them from the tar.

rinted, 4*d.* No Drawings.]

A.D. 1868, September 19.—Nº 2896.

ER, Harry.—(*Provisional protection only.*)—" Improvements in graining and bruising leather, and machinery or apparatus to be employed for such purpose."

the ordinary process of throwing up the grain of leather and of bruising or softening the leather ous to varnishing (in making what is commonly called " patent leather ") the workman places the skin led upon a table, and holding the lower fold with one hand rubs the upper fold over it with the other, a certain amount of pressure which either wrinkles or throws up the grain of leather or bruises and ns the same according to which side of the leather is folded in during the operation.

is evident that by this hand process only a small portion of the skin can be acted on at a time, and e the process is slow and laborious, and its is impossible to get a perfectly even effect over the whole ce.

order to remedy these defects I have invented a machine which will act upon the whole breadth of the at once, and give the required movement and pressure in a much more even, rapid, and effective manner could have been produced by hand.

A.D. 1868, September 19.—N° 2898.

JOHNSON, John Henry.—(*A communication from Arthur Barbarin.*)—" Improvements in m
" apparatus for lighting and regulating the flow of gas employed for illuminating purposes."

This invention relates to a peculiar combination, arrangement, and construction of apparat any number of gas jets may be ignited and extinguished simultaneously and at any given h acting mechanism; also to certain means for simultaneously lighting and extinguishing a number of gas jets at the will of the attendant in charge of the gas main or mains. The first said invention is accomplished by the combined action of electricity and clockwork, whilst under portion of the invention the clockwork and electric currents are dispensed with, the result bei by the action of the pressure of gas in overcoming or being overcome by the weight of a colun which seals the mouth of the pipe through which the gas is supplied to the burner.

[Printed, 1*s*. Drawing.]

A.D. 1868, September 19.—N° 2899.

WOODCOCK, William Cockill.—" An improvement in the construction of bakers' ovens."

According to this invention the fire place is set at the lower part of the brickwork or maso oven at the upper part independent of the fire. The various plates of the oven on which th placed are formed of perforated metallic or earthenware slabs, through which the heat passes equality of temperature in every part of the oven. Hitherto the practice has been to make a fire and to withdraw such fire previous to the insertion of the loaves, but by the new process perfect and uniformity of baking are effected.

[Printed, 8*d* Drawing.]

A.D. 1868, September 21.—N° 2900.

WILEY, William Edward.—(*Provisional protection only.*)—" Improvements in the cons
" cartridges for breech-loading fire-arms."

This invention relates chiefly to the use of a " rim-fire cap " in which the fulminate is plac forated washer is inserted in the cap on the top of the fulminate, pressure being afterwards exer to expand the washer and enlarge the closed end of the cap. The cap is then inserted t aperture in a thin " base-cup," the paper wad placed in the cup around the " rim-fire cap," a employed to form the head. A second thin " base-cup " is then introduced above the paper w turned over cartridge case placed therein. A second paper wad is then inserted, and pressure u a bevilled form to the edges of the head, and at the same time to turn the edges of the open end over the second wad, thereby forming a gas-check.

An ordinary rim-fire cap may be used, or the fulminate may be placed in a common cap ch discharge effected by an anvil.

When it is desirable that the cartridge shall be recharged a short tube may be inserted th cartridge head, in which a " rim-fire cap " or a cap containing an anvil may be placed and readi therefrom after discharge, when the case can be refilled and a new cap inserted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 21.—N° 2901.

a stem or tube rises from this well and supports or simply communicates with a basin or upper open ɔir; enclosed within this tube is a pipe leading from the top of the basin through the bottom of the d terminating a short distance from the bottom of the reservoir. Subsidiary basins are sometimes beneath the main basin, communicating therewith by pipes, and a small tube passes from near the the valve to a bellows or an air pump conveniently placed.

reservoir being filled a few strokes of the bellows or of the air pump sends air into the reservoir, the valve and forcing the water to rise up the central pipe, issuing at the top in a jet which falls into sin, from whence the water passes to the subsidiary basins, where it ascends in jets by the force of tion, afterwards running into the well, and there accumulating until counteracting the atmospheric re upon the valve it percolates back into the reservoir.

ew strokes of the bellows or air pump renews the atmospheric pressure, and the fountain plays uously.

rinted, 10*d.* Drawing.]

A.D. 1868, September 21.—N° 2902.

EELER, CHARLES.—" Improvements in apparatus, taps, or joints for turning on and cutting off the pply of liquids and fluids."

his invention consists in apparatus for turning on or cutting off the supply of liquids and fluids.

y one arrangement a bent tube, preferably elbow shaped, is attached to the vessel holding the liquid, ch through a socket is in connection with another tube, and the junction is effected by a rod tightened by nuts. To the second tube is attached a long tube the depth of the vessel containing the liquid. The w tube is a fixture, but the second tube is free to turn; by depressing the latter liquid is free to flow, by raising it its escape is cut off.

ccording to another arrangement the junction of the tubes is effected by flanges.

y a modification of the joint before described it is adapted with admirable facility to taps in general.

he elbow piece is united to that inserted in the cask from which liquid is to be drawn by a screw, the th of the tube leading from the vessel receives a plug which rests thereon. The spindle of the plug has cket into which a pin on a screw threaded rod passing through the tap takes. By turning the threaded by a key in one direction the plug is released from the tube and liquid can freely flow, but on turning it he contrary direction liquid is prevented from flowing. India-rubber or other washers are fitted on the of the valves to make the joints tight.

Printed, 8*d.* Drawing.]

A.D. 1868, September 21.—N° 2903.

RKIN, JEREMIAH.—(*Provisional protection only.*)—" Improvements in coffee pots, tea pots, and other milar vessels."

channel or water space is formed round the outside of the upper part of the pot, and a rim on the lid s this space so that when the space is filled with water, vapor from the pot is prevented escaping is condensed. To prevent vapor escaping by the spout or tap an internal division is carried down from nner end of the spout or tap to near the bottom of the pot. Instead of the water joint at the lid the ay be provided with flanges between which is a gasket tightened by a cross bar and screws. The es may also be ground and faced. An inside and an outside funnel are used to supply the liquid to ot. The outside funnel passes through the lid and is bent at the lower end to prevent escape of vapor; nside funnel is below the outside funnel, and is terminated by a rose. When the water joint at the lid t used a close chamber or condenser supplied with cold water is formed round the upper part of the Two valves are fitted in the lid, one to let out vapor when the pressure is great, and the other to admit The pot is provided with a guage to indicate the liquid level. A holder consisting of several superposed s is used for holding and dividing the coffee.

rinted, 4*d.* No Drawings.]

A.D. 1868, September 21.—N° 2904.

CKMANN, PAUL EMIL LOUIS WILHELM.—" Improvements in tents."

stead of employing the ordinary wood poles or supports for the canvass at the central part of a tent l tubes are used, their lower ends being provided with screws which screw into sockets which are formed are affixed to plates or extended surfaces, the outer edges of which are cut and turned downwards so enter the ground to a slight extent, by which they are when in use less liable to turn round. At the portions of the central supports stretchers or arms, also tubular, are pin-jointed or otherwise attached; extend down to the side supports, which are also tubular and composed of metal and other tubular unbroken surface with flush joints, and that there shall be no bolt heads or other fastenings visib

The invention consists mainly in attaching a lighter plate (say one fourth the thickness) to th the armour plate by means of eye bolts, and passing the shanks of the holding bolts through plate, the heads of the holding bolts being countersunk into the back of the armour plate, and the of the bolt-head abutting against the front of the back plate.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 21.—N° 2906.

PITON, John George.—" An improved mode of bushing the sheaves of blocks employed f " heavy weights, also of bushing rollers intended to carry heavy weights to enable such said she " rollers to move more freely and render them more durable."

The novelty of this invention consists in constructing the sheaves of blocks and also rollers w bushes composed of two or more concentric rings of metal or other suitable substance or m recess being formed in the sheave or roller to receive the largest of such said rings, the other smal fitting easily therein and into each other, so that when placed on the centre pin or axis of the s roller it shall move thereon more freely than when the bush is fixed in the sheave or roller as h commonly practised in their construction.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 21.—N° 2907.

VERO, Charles.—" Improvements in the manufacture of hats and coverings for the head."

This Provisional Specification describes forming a thin soft felt hat of coarse material which is aft covered with thin sheet gutta percha or compound, over which again is placed a thin soft felt ha material. The compound hat is then placed in a heated mould, and by an hydraulic hat press pr applied, and the gutta percha softening sticks the whole together; cloth hats also are similarly com

The Specification also describes building up hat bodies of cloth and fabric, and also the covering and gossamer hat bodies in a similar manner to the above.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 21.—N° 2908.

FOX, Samuel.—" Improvements in the manufacture of umbrellas and sunshades or parasols."

This Provisional Specification describes strengthening and weakening different parts of the umbrellas and sun shades or parasols in order to obtain greater spread, greater stiffness, and an im droop of the ribs. Also the casing the ends of ribs and stretchers in brass or other metal to prote from rust.

[Printed, 6*d*. Drawing.]

A.D. 1868, September 22.—N° 2909.

A.D. 1868, September 22.—N° 2910.

GROUT, William Henry James.—" Improvements in the construction of apparatus and moulds for " the manufacture of tobacco pipes and other similar articles."

This invention for improvements in the manufacture of tobacco pipe machines and moulds, the object being to produce a more superior and much cheaper article in the manufacture of tobacco pipes and other similar articles. The construction of the machine and moulds are calculated to produce tobacco pipes and other similar articles, rendering them firm and solid, that they may be placed in the pipe kiln for burning without loss of time.

The preparing of the pipe clay for the moulds is by the use of grooved rolls working or revolving against a smooth surface roll or table plate when the rolls are put in motion, the pressure being caused by the action of the rolls on the clay, thereby removing all dampness and moisture which is so desirable in making tobacco pipes and other similar articles.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 22.—N° 2911.

WISE, William Lloyd.—(*A communication from Wilhelm Basson and Ferdinand Lüdecke.*)—(*Provisional protection only.*)—" An improved axle box for railway carriage and other similar axles."

This invention has for its object an improved axle box for railway carriage and other similar axles, and consists in a peculiar construction of axle box in which the oil or other lubricant employed is contained in the lower part of the box itself, and is drawn up by capillary attraction through wicks to a saturated pad, which transfers it to and thus lubricates the neck of the axle, any excess of oil or other lubricant after passing on to the axle neck and falling therefrom passing on its return to the lower part of the box through a filtering medium formed of canvass or other porous material. The box is in two parts, divided horizontally, and held together by screws. Grooves containing pieces of leather or similar material pressed against the axle by springs are provided to prevent the entrance of dust or escape of lubricant at the open end of the box where the axle enters.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 22.—N° 2912.

MURPHY, William Jeremiah, and O'HEA, John Bryan. — " Improvements in the manufacture of " rifled barrels for small arms and ordnance, and in apparatus to be employed in such manufacture."

This invention relates to the manufacture of rifled barrels in such a manner that the rifling or grooving of the barrels is effected during the manufacture of the barrel itself in contradistinction to the method hitherto invariably practised of making the interior of the barrels, firstly, of a plain cylindrical form, and then grooving them out to the required pattern of rifling.

The invention consists principally in the use of a mandrel or core having on its surface spiral projections or grooves (or both, according to the rifling desired), that is, a rifled mandrel or core instead of a plain cylindrical mandrel or core whereon to form the barrel.

We also propose to temper or anneal the iron or steel barrels by means of lead or other easily fusible metal or alloy; this we effect by forcing the barrels whilst in a heated state through blocks of the lead or other metal or alloy.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 22.—N° 2913.

BROOMAN, Clinton Edgcumbe. — (*A communication from Armand Banaré.*) — (*Provisional protection only.*)—" Improvements in apparatus for registering the speed of ships and vessels and of streams."

A vane or screw immersed in the water rotates as the vessel progresses, and by means of a crank alternately compresses and expands an air chamber; this chamber communicates by an air tight tube with a similar chamber on board, which is thus alternately expanded and contracted, thereby causing a rod projecting therefrom to act upon a counting or reckoning apparatus.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 22.—N° 2914.

COTT, Bertie Charles.— (*Provisional protection only.*) — " Improvements in the construction of measures used by publicans, chemists, and others for measuring liquids."

The novelty of this invention consists in so constructing measures as to dispense with the necessity of employing funnels to empty the contents of measure into bottles and other like vessels. It is proposed to effect this by affixing a spout to the bottom and under side of the measure, a hole being made through the level. The end of this pipe being immersed in the water, the steam forces water up the pi vessel, and the float therein is raised so as to close a valve at the top of the vessel. Wher the pipe becomes uncovered the water descends back to the boiler, the float falls, and t opened, allowing the escape of the steam.

To draw off steam from a boiler at a diminished pressure a balanced valve is used, which with equal freedom whatever the pressure in the boiler. The valve is kept open by weigh as may be required, so that the steam passes the valve until the back pressure on the valv unbalanced is sufficient to close it.

To draw off condensed water from steam cases or tubes, an instrument which elongates employed; it is placed in the cistern in which the condensed water accumulates, and is con an escape valve by multiplying levers.

For the same purpose a metal spiral, contained in a cylindrical case of less expensive material, is Or a spiral tube filled with mercury is sometimes used.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, September 22.—N° 2916.

HARLING, Robert.—"Improvements in telegraphic instruments."

1. A rotary pin carries its supply of ink.
2. The anvil over which the paper passes is mounted on an adjustable arm, which allows the p put out of reach of the pen or marker; the instrument then works by sound only.

[Printed 8*d.* Drawing.]

A.D. 1868, September 23.—N° 2917.

LUCAS, Thomas, and GRIMSHAW, William.—(*Provisional protection only.*)—"Improveme " preparation of wool to be felted," the novelty of which mainly consists in the use of a re carriage containing a table movable on a pivot, which receives wool from an ordinary carding en folds, and when a definate number of folds have been laid on the said table it is moved through by preference ninety degrees, and another set of folds laid on the others, by which means the fibre and after felting the material is of a more uniform tension and elasticity, and more suitable for ha felts, or other purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, September 23.—N° 2918.

CALVERT, Frederick Crace.—(*Provisional protection only.*)—"Certain improvements in d " printing yarns and fabrics."

My invention consists in the use of phosphoric acid combined with various bases, such as lime, alumina, iron, manganese, tin, lead, and others, either with or without tanning substances, as mo dyeing and printing.

of phosphoric acid or soluble phosphates are used containing oxide of iron, or oxide of iron is ing the preparation of the phosphoric acid or soluble phosphate.

, 4*d*. No Drawings.]

A.D. 1868, September 23.—Nº 2920.

OSH, John, and BOGGETT, William.—(*Provisional protection only.*)—" Improvements in ication of elastic fillets, cords, or bands to boots and shoes and other articles of wearing apparel." her application of certain springs described in our Patent of March, 1868, No. 1065, for improve- boots and shoes, to any description of boots or shoes, and the use of elastic fillets with studs or fastenings for gloves, vests, and trousers.

, 4*d*. No Drawings.]

A.D. 1868, September 23.—Nº 2921.

Y, Edmund William. — " Improvements in means or apparatus for lubricating cylinders, nd the rubbing parts of machinery generally."

ntion consists in the employment of a disc or plate working between two fixed plates, there being oles in the moveable disc or plate which alternately come opposite a hole or holes in one of the s, and then opposite a hole or holes in the other fixed plate, one of such fixed plates forming the the oil or grease cup or reservoir, whilst the other is held in position by bolts and nuts, and is the moveable plate or disc by a spring or by other suitable means, the moveable disc being y a rod or shaft receiving motion in any suitable manner.

d the moving part of the lubricator may be in the form of a piston or plug, having a suitable openings therein or therethrough, which are alternately brought opposite one opening and then nother opening in the cylinder or seat in which it works.

, 8*d*. Drawing.]

A.D. 1868, September 23.—Nº 2922.

Henry.—" Improvements in the construction of sewing machines or machines used for the of woollen, cotton, silk, or other fabrics, or in the making of garments or parts of garments n or other like work."

ention consists in the use of a double foot presser, and in the formation of a " knot " stitch, and d tension for the shuttle thread by the use of a toothed or spiked wheel within the shuttle.

, 10*d*. Drawing.]

A.D. 1868, September 23.—Nº 2923.

L, Henry John Broughton. — (*A communication from William F. Babcock.*) — (*Provisional only.*)—" A new or improved perservative paint or composition for protecting ships' bottoms, ng submarine woodwork, and other useful purposes."

roved paint or composition is applicable for various preservative purposes, such as protecting the wood and iron ships from fouling, preventing corrosion or oxidation of metals, and protecting tures from insects.

position consists of the following ingredients :—

Arseniate of copper,
Oxide of iron,
Carbonate of lime,
Crystallized strychnine,
Concentrated anhydrous extract of tobacco,
Crystallized borax.

ingredients coal tar or other base or medium or coal tar with other base or medium is added to the colour required, and the whole is ground.

es, as a liquid, linseed oil and turpentine are employed in the composition.

, 4*d*. No Drawings.]

A.D. 1868, September 23.—Nº 2924.

Y, Andrew.—" Improvements in barometers and thermometers, and in their combination with clocks, and other instruments."

ures of novelty which constitute this invention are,—

special arrangement of barometers, whereby they are rendered suitable for combining with

produced—in what may be termed a universal feed-motion which will feed in any direction; and
simple description of adjustable tension for the various threads used in sewing machines.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 23.—N° 2926.

GLEW, John Henry.—" Improvements in button holes for boots, shoes, gaiters,
" articles."

Pieces of vulcanized india rubber are inserted between and cemented to the leathers of the b
gaiters, or other articles; the said india rubber having holes or slits therein (corresponding to h
leathers) through which the studs or buttons pass, and are secured therein by the contraction
india rubber.

[Printed, 8*d*. Drawings.]

A.D. 1868, September 23.—N° 2927.

HEPTONSTALL, Charles.—" Improvements in looms for weaving."

The novelty consists,—

Firstly, in the employment of a series of short beams or bobbins for holding and supplying t
sections. On each of these beams or bobbins I either form or fix a ratchet wheel and apply the
lever which takes into the teeth of one of the wheels respectively by gravitation, and to each secti
threads I suspend betwixt the rails a pendant tension weight of suitable size or weight accor
amount of tension required to be put upon the warp in the weaving thereof, or springs may
this purpose. These weights I connect by cord or chain to the catch levers respectively, so that
of the weights is raised by the taking up motion it lifts the catch lever out of the teeth of the ra
it is in connection with, and thereby leaves the said bobbin at liberty to turn on its axis
warp. This part of the invention is also applicable to ordinary looms for weaving even fabrics
weight in form of a roller or rod of suitable weight, or may be weighted, is applied to rest upo
the warp betwixt the back beam and a rail provided and fixed across the loom for the purpose, w
on being raised by the take up motion operates in a similar manner to remove a catch lever which
a ratchet wheel on the ordinary warp beam, thereby letting off the warp.

Secondly, this invention relates to the taking up motion, and consists, firstly, in the applicatio
and wheels with a new combination and arrangement of levers and ratchets for driving the
fluted taking up rollers instead of levers and pawls; and, secondly, in the application of a tooth
fit into and form a nip or hold on one of the said fluted rollers, and thereby to employ only
of such rollers instead of two series.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, September 23.—N° 2928.

THOMAS, William.—" Improvements in the construction of circular saws or cutters, more

ıe part of the invention has for object the remedying of certain defects in the valves or taps heretofore
oyed for opening and closing communication between the tubes and compressing instruments employed
eumatic signalling apparatus, and consists,—

employing between the compressing instrument and the tubes a valve box or boxes of peculiar con-
tion containing a series of valves corresponding to the number of signal tubes. Communication is
ed or closed at pleasure by means of the said valves between any one or more of the tubes and the
ressing instrument, and when the former are by them closed thereto, they are opened to the external
sphere.

so in employing a relief-valve on the compressing instrument by which a deficiency of air occasioned
in by too suddenly closing the communication between it and the tubes is obviated by allowing the
spheric air to enter through the valve to make up the deficiency.

fecting by one movement on the part of the operator the same result as has heretofore required two
ate movements, namely, the opening or closing of the tubes to the compressing instrument and the
ression of that instrument itself. This is effected by arranging the lever or levers which move the
s in such manner that they by the same movement depress the air vessel or other compressing
ument and give the desired signal.

other part of the invention consists in causing air vessels connected by tubes to a main compressing
ument with or without the improvements before mentioned to transmit motive power for moving directly
the intervention of suitable mechanism hammers or other instruments to strike bells, fire cannon,
ate the passage of trains by exhibition of lamps or semaphore signals and other similar purposes.

rinted, 2*s.* 10*d.* Drawings.]

A.D. 1868, September 24.—N° 2930.

ODS, Hamilton.—" Improvements in apparatus for heating water by means of steam."

is invention relates to the heating of water employed in breweries, distilleries, and for other pur-
s. The water is contained in a tank or cistern of wood, metal, or other ordinary material, the said
being fitted with one or more sets of steam chests or main-pipes. The two chests forming a set are
ected together by means of bent tubes which penetrate the water to a suitable distance, the steam
admitted to one of the chests and passing through the said bent tubes to the other chest. Some-
s partitions are fixed in the chests so as to cause the steam to pass backwards and forwards from one
to the other, entering different portions of the chests each time, and sometimes a number of the
s are combined together so as to form a ring, or a rectangle, or otherwise, as may be most suitable to
rm and dimensions of the tank.

chamber is formed under the tank communicating with the chests by means of pipes, into which
ber the waste water runs, and from which it is withdrawn by suitable means.

rinted, 10*d.* Drawing.]

A.D. 1868, September 24.—N° 2931.

GST, Charles, WATSON, Henry, MUSCHAMP, John Bell, and WILSON, Newton.—
rovements in the manufacture of carburetted hydrogen or luminous gas."

invention consists of certain improvements in the manufacture of luminous gas generally known under
me of carburetted hydrogen; and in producing such luminous gas from the revolatalization of hydro-
aceous fluids known under the name of dead oils, gas tar, petroleum, or even common tallow or olic
in any form by repeatedly combining such fluids with superheated steam, and then condensing such
ns which have not virtually become gaseous and using it over again; while that portion which has
e gaseous is passed over into a receiver or gasometer; and also in recarbonising gases made by the
s herein named that are deficient in their equivalents by passing them through a chamber containing
carbonaceous fluid.

rinted, 10*d.* Drawing.]

A.D. 1868, September 24.—N° 2932.

N, William.—(*Provisional protection only.*)—" An improved method of and means for connecting
es, tubes, cocks, and other similar articles."

features of novelty are principally the dispensing of soldering or usual fastenings in the fitting up or
ing of pipes, tubes, or hoses; and the manner of performing such labour by new shapes of bosses and
as exemplified in the Specification of the invention.

Printed, 4*d.* No Drawings.]

DEATH, Ephraim, and ELLWOOD, John.—" Improvements in apparatus for cutting le
" paper, card, or other material."

Instead of the ordinary vertical reciprocating apparatus a continuously revolving roller with kni
set round its periphery is employed, such roller being caused to revolve in contact with and press a
roller covered with wood or lead so as not to injure the knives. The leather or other mate
required by the knives acting thereon in succession as it passes through the rollers, and the knive
from the separated leather by plugs, punches, or plates, forced outwards.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 24.—Nº 2935.

COWAN, David.—(*Provisional protection only.*)—" Improvements in float valves for the adm
" and cold water and other fluids into and out of cisterns."

This invention has for its object improvements in the construction of valves for the admiss
into and out of cisterns, being very simple, more compact in form, and more complete in actio
thing of the kind heretofore.

It is constructed of two parts, a float, which is an air tight vessel that may be made of any k
metal and circular in shape, or any other form, with a dome shaped cover, and having a central
to the cover large enough to pass over the valve, leaving an extra space all round.

The other part consists of a valve of an egg shape with a central spindle, upon which is a butt
to close upon the valve seat. This button rests in a cup underneath, through which the spindle
in a vertical position; the button is thus protected from the inward action of the fluid through t

The valve has also another larger cup on the top in an inverted position and nearly of the sa
as the central opening in the float.

These two cups are essential parts of this invention, completely protecting the float and clack fr
or current of the incoming fluid through the valve till the cistern is within an inch of being ful
float being lifted a little moves the clack from the cup, almost directly closes up against the seat a
the inlet, thus allowing a full and uninterrupted flow of the entire capacity of the inlet till the cister

Thus prepared, the valve is screwed tight upon or into the induction pipe, the float is then
the top of the valve spindle passing through the dome top of the float and secured by a nut or ot

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 24.—Nº 2936.

FRY, James.—" Improvements in the manufacture of wheels for carriages, carts, and all oth
" vehicles."

I propose to cast a box and nave having lugs on the outer edge of its circumference; between
the spokes are to be fitted so as to fill the space between the lugs and axle box; over the
fasten a disc or cap, which prevents the spokes from moving in any direction, and holds the who
and firm. By removing the disc or cap it is easy for an unskilled person to put in a new spo
loosening any of the others.

[Printed, 8*d*. Drawing.]

e a loose boss having three arms thereon ; to the outer arm is attached a link and weight ; to the inner
s attached by a screwed or chased rod and nut a chain, which from thence is passed round the neck
warp beam and to a stud fixed to the framing of the loom. The centre or third arm is operated upon
e upper rod of the vibrator.

rinted, 4*d*. No Drawings.]

A.D. 1868, September 24.—N° 2938.

NER, **James Francis**.—(*A communication from Joseph Hugand.*)—" Improvements in machinery
embroidering or ornamenting fabrics."

e embroidering is effected by means of one, two, or more crochet hooks which move up and down
gh holes in a bed plate, and are fed from below with threads of various colours from bobbins or a
ng disc which lays the threads alternately under the hooks. Other threads are traversed above the
by vibrating guides, and are secured by the threads of the crochet hooks. The fabric or article to be
ted upon is placed on a rotating table constructed in the form of an annular trough, which may be
d round horizontally by the operator.

rinted, 1*s*. Drawing.]

A.D. 1868, September 24.—N° 2939.

TS, **William Thomas**, and FLEETWOOD, **Daniel Joseph**.—" Improvements in and applicable
hydraulic and other presses, parts of which improvements may be employed for or with other descriptions
machinery."

is invention refers to improvements upon a former invention described in the Specification of a patent
ed to the above, Augt. 28th, 1867.

is Specification describes hydraulic and other presses in which a pulsative and intermittent action of a
r and pressure plate is obtained partly by hydraulic and partly by mechanical means.

e present improvements refer to the employment of a forcer and pressure plate both actuated by
anical means, giving an intermittent and pulsative reciprocating action to such forcer and pressure
. The invention also refers to interposing hydraulic cylinders which may be used with the mechanism
ibed for regulating the pressure generated thereby, such hydraulic cylinders being also applicable to
es not having pressure plates.

rinted, 1*s*. 6*d*. Drawings.]

A.D. 1868, September 25.—N° 2940.

GS, **Isham**. — (*Provisional protection only.*) — " Improvements in making white lead, and in the
ans and appliances for performing the same."

is invention consists in casting the blue lead upon hot plates and operating upon the metal in convenient
tacles or chambers. Nitric, nitrous, and acetic acids are used together or separately with carbonic
common air, or oxygen. Heat being applied, the acid vapours and steam are blown into the chambers
ought into contact with the lead. The acid vapours are subsequently condensed in suitable condensers
sed again and again. Pumps are employed to throw definite quantities of air and gas into the chambers
ceptacles, and the quantities so thrown in are registered by meters and counters. The gases and
urs are caused to traverse the chambers otherwise by draught or propulsive force. In some cases the
bers are packed with lead ; and oxygen, carbonic acid, and acid vapours are made to act thereon in a
d state, with or without pressure.

e carbonic acid is obtained from the waste gases of breweries, distilleries, and wine factories ; also from
ces, shafts, and flues ; and from buildings where combustion or respiration is carried on to any great
t. It is further procured by heating bicarbonates.

certain cases the contents of the chambers are alternately heated and cooled ; and coal gas, petroleum,
hydrocarbons are sometimes used to supply the requisite heat, as well as the carbonic acid and water
ired in making white lead.

Printed, 4*d*. No Drawings.]

A.D. 1868, September 25.—N° 2941.

BITT, **James**.—" Improvements in the treatment, preservation, and utilization of the potatoe."

e washed tuber is digested in water at a temperature below the gelatinizing point of starch, but suffi-
ly high to soften and render flexible its fibrous structure. After cooling the digested tuber is submitted
adually increasing pressure to separate the liquid from the solid constituents. The expressed liquid is

[Printed, [illegible] No Drawings.]

A.D. 1868, September 25.—Nº 2942.

BROOMAN, Clinton Edgcumbe.—(*A communication from Laurent Bovy.*)—" Improvements
" loading fire-arms."

This invention consists in closing the breech by means of a vertical sliding block worked by th
guard, which in the same movement cocks the gun, raises the sliding block to allow of the inser
cartridge, and acts on an extractor.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 25.—Nº 2943.

STECKEL, Joseph Louis René.—(*Provisional protection only.*)—" Improvements in wind
" instruments."

The object of the invention is to improve the sound emitted from wind instruments of a tubular
at the same time to facilitate and simplify the respective fingerings at present in use on this class
instruments.

This object I attain by substituting for the circular and comparatively small holes or openings n
on such instruments openings of an oblong form and of much larger area relatively to the size of
than ordinary and increasing gradually in size from the foot of the instrument to the embouchure.
openings are to be made with their longer axis lengthwise of the tube, and although necessarily
form need not indespensably be eliptical or oval, but may be of any other regular or irregular
much breadth being given to the openings as is allowable without interfering in any way with the
efficient working of the keys or fingers.

I also propose to effect a notable alteration and improvement in the form of the key for stopp
unstopping these openings. Instead of the key presenting a plane surface towards the interio
instrument, thus leaving a recess between it and the interior concave surface of the tube, which
more or less the continuity and regularity of each sound-emitting air-pulse (as in the instruments
use), I make the inner face of the key with a projection of such thickness and form as to fill up t
so that when closed its surface shall be flush with the interior surface of the tube.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 25.—Nº 2944.

WRIGHT, John, and WILLIAMS, William Henry.—" Certain improvements in the manufa
" gas burners."

The novelty of this invention consists in making the burner of tube in contra-distinction to bein
solid, and securing a metal tip within such tube, which tip may be removed and re-placed as
required.

And in some cases the tip is nicked or grooved at right angles to the orifices of escape, and a thi
of steel or other metal inserted, thereby dividing the flame and obtaining a considerable increase of

ature of novelty which constitutes this invention is, the special arrangement of apparatus whereby ıg of cloth or yarns with one or more colours or shades of colour can be effected in one continuous ı, in place of several distinct operations as hitherto.

ed, 4*d*. No Drawings.]

A.D. 1868, September 25.—N° 2946.

:N, Charles, and **HOLDSWORTH**, William.—(*Provisional protection only.*)—" Improvements ıing, boring, and slotting machinery."

nvention relates to improvements in the arrangement and construction of machinery for cross in combination with apparatus for boring and slotting, such apparatus being adapted for being l in mechanical operations required for the construction of marine engine beds and other parts of other engines or machinery, or where the parts to be operated upon are of considerable magnitude, :t being to keep large bodies of metal fixed and stationary whilst being operated upon by a ; cutting tool.

ject of this combination of machinery is to afford facility for completing large pieces of machinery s of one fixing, thus insuring all parts which are planed, bored, and slotted being perfectly true h other, such combined operations being accomplished at considerably less cost than by machinery ıt present employed for these purposes.

ed, 4*d*. No Drawings.]

A.D. 1868, September 25.—N° 2947.

)N, William Edward.—(*A communication from Addison Calvin Fletcher.*)—(*Provisional protection* ' Improvements in adhesive stamps applicable for postal, internal revenue, and other purposes."

lhesive stamps are made up of a thick portion or body having holes through it, and a thinner back ır layer composed of tissue or any suitable bibulous paper applied as a covering to the holes, both or layers being securely united to make up the complete stamp, the latter being suitably engraved d on its face, and having adhesive material applied to its back.

ed, 4*d*. No Drawings.]

A.D. 1868, September 25.—N° 2948.

E, George.—" Improvements in sunproof fabrics, and in constructing tents, sunshades, or weather :ors."

'rovisional Specification describes forming sunproof fabrics by securing sheet cork or cork dust two surfaces of fabric.

ıstructing tents, sun shades, or weather protectors (employing by preference sunproof fabric as scribed) a central pole is held in a socket let into the ground. Radial arms extend from the pole, ch fabric is distended.

ıs methods are described for expanding and lowering the radial arms. Portable sunshades or protectors may be made in a similar manner.

ed, 10*d*. Drawing.]

A.D. 1868, September 25.—N° 2949.

RD, William Jellicorse.— (*Provisional protection only.*) — " Improvements in mechanical eepers for recording the time when workmen come to or leave their employment."

ıvention has mainly for its object to record the time when workmen come to or leave their employ- \ till is employed for this purpose, through the slit or mouth of which the workmen are to drop The tallies are received in one or other of a series of drawers ranged one above the other. The rawer is fixed whilst the upper drawers are movable on slides. The upper drawers are all first ack, and whilst so held back any tallies dropped into the till fall into the lowest drawer. At a ıe the drawer next above the fixed drawer is caused to shoot forward to cover over the fixed drawer; s dropped into the till are then received into the drawer so shot forward, and so on for each The movement of the several drawers is governed by a slowly revolving axis carrying cam discs.

ed, 4*d*. No Drawings.]

A.D. 1868, September 25.—N° 2950.

D, Robert, and **HOCKING**, John, the younger. — " Improvements in calcining ores and ıls."

A.D. 1868, September 26.—Nº 2954.

N, John Henry.—(*A communication from Russell Aitken.*)—" Improvements in the permanent railways."

vention consists, firstly, in tightening the rails in their chairs without the aid of the ordinary eys by driving an iron or steel wedge, either straight or bent slightly, underneath the bottom of d forcing it upwards against a metal filling piece introduced between the side of the rail and one s of the chair.

y, in supporting the rails in chairs or otherwise upon cross girders which bear at their extremities sleepers or buckled iron plates, the end bearings of the sleepers being outside the points of t of the rails or chairs to the cross girders, whereby a yielding or elastic iron permanent way is

, 8*d*. Drawing.]

A.D. 1868, September 26.—Nº 2955.

FE, James.—" Improvements in warping mills and hecks."

of putting only one hole in each shank I put two, three, or any number of holes for the eyes on , so that when one hole is cut the warper can use another, and the warping heck will therefore than hitherto.

econd place, instead of brass rods and forged eyes, I make the hecks of flat rods of steel or iron, t pieces of flat iron or steel fastened to them, in which are formed two, three, or any number of form the eyes. The hecks may also be formed by putting one or more holes in the centre of flat on rods, and arranging a flat rod along the top and bottom.

rovement in the warping mill consists in arranging the driving shaft along the top or bottom ll at right angles to it and driving by means of friction pulleys or wheels, friction pulleys being

, 8*d*. Drawing.]

A.D. 1868, September 26.—Nº 2956.

TTOM, John.—(*Provisional protection only.*)—" Improvements in apparatus for communicating the passengers, guard, and engine driver of a railway train."

ention consists in the use of a slender cord kept by weight, spring, or otherwise in a state of nd extending the whole length of the train. An alarum is connected to each end of the train, e cord being severed by a passenger the alarums give notice to the guard and engine driver.

, 4*d*. No Drawings.]

A.D. 1868, September 26.—Nº 2957.

SHUA.—(*Provisional protection only.*)—" A new system of geering, which is applicable to lathes, , shaping, and screwing machines, and also applicable in all cases where an extra purchase or ration of mechanical power is required."

velty of this invention consists in the application and adaptation of the internal toothed wheel, al toothed wheel, the cross slide and the eccentric, so arranged and combined with the wheel, peed pulley, and the shaft, spindle, or axis, together with the sliding pin or stud, so as to enable an to change the speed from quick to slow, or the contrary, in a moment.

, 4*d*. No Drawings.]

A.D. 1868, September 26.—Nº 2958.

RTH, Charles Frederick, PEARSON, George, and SMITH, William.— (*Provisional only.*) —" Improved apparatus for the increase of safety on inclines of railways or tramways."

ect of this invention is to operate on scotch blocks, levers, and switches respectively, so as to accidental descent of waggons on inclines.

, 4*d*. No Drawings.]

A.D. 1868, September 26.—Nº 2959.

, Peter.—" Improvements in the manufacture of copperas, applicable to the purification of ting gas and to other purposes."

vention consists in the production of copperas from the slag of puddling furnaces and other s of iron in a proto state.

, 4*d*. No Drawings.]

and card board, and in apparatus employed therein; which apparatus is also applicable to othe

According to this Provisional Specification paper for making card or paste board is pasted or passing it through rollers revolving in contact with paste or cement. This paper so cemented i each side with a sheet of paper, and the whole pressed together; or the paper may be cemented it between endless aprons. In a similar way paper may be cemented for other purposes.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 26.—N° 2962.

MORANT, George Francis.—" Improvements in the manufacture of artificial fuel."

According to this Provisional Specification peat or turf or a mixture of earth and vegetab saturated with dead oil or creosote.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 26.—N° 2963.

GALLET, Victor.—" Improvements in the manufacture of cast steel."

According to this Provisional Specification iron ore is mixed with various salts and substa melted down at once to form cast steel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 26.—N° 2964.

GIBSON, Henry.—" Improvements in the manufacture of tobacco, and in the machinery or " employed therefor."

The feature of novelty which constitutes this invention is the twisting of tobacco by means o [*having**] an endwise movement backwards and forwards for the purpose of coiling the tobacco e it, also the use of levelling rollers for rolling down inequalities in the twisted tobacco.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 26.—N° 2965.

DOERING, Frederick Bernard.—" Improvements in machinery for boring or working in r " or earth."

The forward movement of the engine according to the progress of the work is regulated by a valv which regulates the supply of water to and the outlet of water from a cylinder attached and adjac main cylinder, the said valve being worked in a manner already known by motive fluid distributed main cylinder to a small cylinder, the piston of which is connected to the valve. The adjacent cy a fixed piston, and is supplied with compressed air or other fluid at the front; water or other flu reservoir is led to the back of this piston by a tube leading to the valve. As the tool cuts deep e uncover a certain port in the main cylinder the valve moves to let out part of the water from the cylinder, and the compressed air in this cylinder then moves the engine forward, this advance tak intermittently until the engine reaches the front of its travel. The valve is then moved to inlet for water to the adjacent cylinder, pressure is exerted in the water reservoir, and the com ports, according to the length of stroke required. A similar arrangement may be adopted to tion of the ports communicating between the main cylinder and its valve.

secured in the end of the piston rod as follows:—The rod is threaded to receive a nut, and the he key is adjustable; the nut is screwed up to allow the key to jam against it, and wear is thus for without washers. For the same purpose a nut may be used on the inner end of the tool.

d. Drawing.]

A.D. 1868, September 26.—N° 2966.

OSEPH, and KITCHING, JOHN NAINBY.—(*Provisional protection not allowed.*)—" Improve- hydraulic machinery for pulling heavy weights and straightening metal shafts, bars, beams, ubes."

nethod of securing the small inner tube to the pump, and the manner of working the said tube her tube (which forms the piston rod) by means (or through the medium) of a stuffing box in e whole of the working parts being enclosed and secure from accident.

general combination of pump, cistern, cylinder, and tubes, as described in the first part of this

general combination of pump, cistern, cylinder, and links, as described in the second part of 1.

No Drawings.]

A.D. 1868, September 28.—N° 2967.

), JAMES.—(*Provisional protection only.*)—" Improvements in apparatus for the prevention of d for regulating the supply of air to furnaces," the novelty of which mainly consists in the use ment wheel with ratchet wheel, barrel, pallets, and pendulum, to be acted on by a cord and to gradually close the damper, but not entirely shut off the draft, by which meanes the admis- the furnace is varied so as to prevent dense or black smoke being formed in steam boiler or s.

No Drawings.]

A.D. 1868, September 28.—N° 2968.

RLES DENTON.—(*A communication from Thomas Shoenberger Blair.*) — (*Provisional protection* rovements in converting cast iron into wrought iron, and in uniting oxides and fluxes with t iron."

ition consists in combining solid oxides, fluxes, or other substances with molten cast iron by latter into a receptacle in a regulated stream, while at the same time the oxides, &c. are mixed sifting the same in lumps, grains, or powder into the metal and stirring it into the same. solidified mass, consisting partially of wrought iron and partially of yet unconverted cast iron, ited so as to convert it into homogenous wrought iron, for which purpose it is placed in a or other furnace, having by preference a cinder bottom. The resulting wrought iron is then ammered, rolled, &c. in the ordinary way.

No Drawings.]

A.D. 1868, September 28.—N° 2969.

WILLIAM.—" Improvements in arrangements or apparatus for facilitating omnibus traffic, the rements being also applicable otherwise, and relating to tramways, wheels, and carriages."

ed tramway is composed of wrought-iron, malleable-castiron, or steel plates or rails laid in es formed for them in the roadway, and the rails are made with their upper surfaces at two s. The plates are fixed down by means of split spikes entered into holes bored for the purpose blocks, the spike fangs being spread at the bottom by being driven against a metal ball pped into the hole.

ed wheel is formed with what may be termed a stepped tire. The part of smaller diameter is n the raised surface of the rail, and the larger part is broad enough for the wheels to run upon roads.

ement in carriages consists in making the body of the carriage separate from the frame or ests immediately on the wheels and in arranging the parts so that the body may be turned as e.

ed apparatus for checking payments consists of a receiver formed with an upper and lower . The upper compartment is formed with glass sides, and the passenger drops his fare into it haped aperture in the top. The conductor sees whether it is the proper amount, and on being s a plate or valve by means of an external handle, and thereby lets the money drop into the lower compartment. In the lower compartment the money is received in a drawer, which is locke proprietor. The lock is made so as on being unlocked to close the aperture from the upper com A coil of numbered tickets is carried in a circular box and acted upon by a coiled spring and a de the detent being touched the spring protrudes the ticket coil to the extent of a ticket, which is to given to the passenger.

The improvement in advertising consists in utilising the unnumbered parts of the ticket coil b advertisements on them.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 28.—N° 2970.

GREGORY, JAMES.—" Improvements in apparatus for preparing and cooling animal charcoal."

The improvements consist in an improved construction of heating cylinder or retort for charri bones, in which is fixed a plate or series of plates having longitudinal perforations made therein plates affixed thereto in order properly to agitate and distribute and pass onwards the charred ma

Also in an improved apparatus for cooling the heated charred materials, which are made to pa pipes fixed in a suitable water chamber so that currents or jets of water may be made to cool materials after they are delivered from the retort or heating cylinder.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 28.—N° 2971.

BREMME, GUSTAV ALBRECHT CARL.—" Improvements in machinery for untwisting strands " twisted or spun materials for picking oakum, dressing fibres, and other analogous purposes."

Strands are untwisted by a pair of rollers fitted in a revolving frame, the journals of which ar the strand first passes from feeding rollers or otherwise and enters the first hollow journal, which co to the untwisting rollers, the untwisted strand is then conducted by the other hollow journal to a h dressing cylinder. The hackle or dressing cylinder consists of two or more hackle combs carrie plates, and each provided with a hinged cover having holes for the teeth to pass through.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, September 28.—N° 2972.

DUNCAN, ROBERT.—" Improvements in earth closets and commodes."

I mount the earth reservoir or hopper so as to swing backwards and forwards in the back casin the level of the seat. The reservoir has a double bottom, the upper one having an aperture which the earth is supplied on to the lower bottom in the desired proportions. The earth is sup the soil in the lower part of the closet or commode by jerking or pulling the hopper forwards the front casing by the aid of a pull handle, when it is ejected from the mouth or shoot of said Sifted earth is not required in this apparatus, as there are no parts liable to clog.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, September 28.—N° 2973.

ROBINSON, JAMES.—" Improvements in ploughs."

According to this Provisional Specification a cultivating tine or grubber is fixed behind the plough draft chain passes from it to the front part of the beam.

[Printed, 6*d*. Drawing.]

A.D. 1868, September 29.—N° 2974.

BRIGGS, THOMAS.—" Improvements in connecting the ends of metal bands for securing bales, " apparatus connected therewith."

My invention consists in making slits in the ends of metal bands, and in bending the metal at th of the slits into concave and convex forms. The ends of the band when on the bale fit into each oth the space left between the concave and convex portions is filled up by a key which secures the ends to Also in connecting the ends of bands by studs fitting in slots in the bands, the said studs having fitting the larger ends of the slots and being flattened between the heads to fit the narrow parts of th Also in presses or apparatus for making the slits and slots in the bands.

[Printed, 1*s*. Drawings.]

A.D. 1868, September 29.—N° 2975.

SMITH, JOHN.—" Certain improvements in machinery for weaving and cutting fustians and " fabrics."

ntion relates, first, to improvements on a former Patent granted to me on the 4th April 1864,
id it consists in driving the rod which carries the weft across the shed by a pump acting on a
d to the said rod.

, in the application of toothed or fluted rollers to the taking up motion of looms.

rdly, in an improved machine for cutting the races of cotton and woollen cords, fustians, and
s. The machine consists of a series of circular cutters working in guides which enter into the
fabric. The fabric is stretched and bent over a straight edge and carried forward by fluted or
lers.

1*s*. Drawing.]

A.D. 1868, September 29.—N° 2976.

)RTH, JAMES.—"Improved apparatus for economising fuel and utilizing the heat produced in
s or stoves for warming and ventilating, and for other purposes."

ures of novelty in this invention consist in the application of a swivel door working in a frame or
the flue; and further in the application of an inner casing heated as described by hot air, hot
ts of gas, and surrounded by an outer casing reacting from near the floor almost to the ceiling of
ent for the purposes described.

8*d*. Drawing.]

A.D. 1868, September 29.—N° 2977.

WILLIAM EDWARD.—(*A communication from Dumont-Husson.*)—"An improved swimming
s which may also serve as a safety belt."

ention consists, firstly, of a swimming or safety belt formed of two tin boxes joined at the back by
and in front by a belt with straps. When the belt is worn the tin boxes come under the arms
from the middle of the back on each side of the body, but do not meet in the front, the stomach
eing covered by a belt attached to each of the tin boxes fastened by straps.

nd part of this invention consists in the application of a belt with an indefinite number of such
o keep ships from sinking, for supporting rafts, and for other like purposes.

, 8*d*. Drawings.]

A.D. 1868, September 29.—N° 2978.

LEXANDER MELVILLE.—(*A communication from Jean Ventouillac, Louis Ventouillac, and Edouard*
nprovements in machinery or apparatus applicable for raising and lowering weights, hauling, and
rposes."

ing the invention to a windlass I mount a triple or other cranked shaft in the framing of the
ach having a friction roller supporting a lever suitably weighted, and provided with a catch
n ratchets fixed on a shaft carrying toothed gearing at each end, imparting motion to the chain or
or drum used for raising or lowering weights or otherwise. This machine is applicable for pro-
ver [*by means of levers**] in raising or lowering weights, hauling, and other purposes.

, 1*s*. 6*d*. Drawings.]

A.D. 1868, September 29.—N° 2979.

OHN HENRY.—"Improvements in lamps and lanterns."

ct of the invention is to construct lamps and lanterns in such a manner as to maintain a circula-
from the burner upwards through a globe or hollow vessel and downwards through air tubes to
nber communicating with the burner, air also being admitted between the top of the said globe
e over it leading to the air tubes. Air is admitted at the bottom of the globe through a perforated

rent kinds of lamps the number and forms of the air tubes are varied, and in some cases the globe
ated plate are dispensed with.

, 8*d*. Drawing.]

A.D. 1868, September 29.—N° 2980.

, EDWARD THOMAS.—(*A communication from Wilbur Fisk Parker.*)—"Improvements in gas
"

ct of this invention is to so construct gas burners that whenever the flame is extinguished, whether
r accident, the flow of gas will be cut off; and to this end the invention consists in combining

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s "by means of levers" are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the
dgment.

with such burners mechanism constructed so as to hold and cut off the supply of gas from the burners by either expansion or contraction occasioned by the heat of the flame.

[Printed, 8*d*. Drawings.]

A.D. 1868, September 29.—N° 2981.

BRANDON, Alexander Horace.—(*A communication from Charles William May.*)—"An improved "watch case spring."

The inventor employs a thin piece of steel which can be sprung into the watch case, and will occupy about ⅘ths of its interior circumference and in nearly the same place occupied by the two springs usually employed.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 29.—N° 2982.

FOSTER, John.—(*Provisional protection only.*)—"A new or improved machine or apparatus for preparing "or damping and marking paper used in the manufacture of spool tubes and cartridge cases."

The novelty consists,—

In the combined machine or apparatus for damping the paper as it is unwound from one roller to another; also in placing a mark or design on the paper and measuring it during the process or passage thereof through the machine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 29.—N° 2983.

NEWTON, Alfred Vincent.—(*A communication from Adolph Lyngbye.*)—"An improvement in the "manufacture of boots and shoes."

The invention substitutes horn for leather in the manufacture of soles, moulding them into shape after the manner usually employed in moulding buttons and other articles in horn.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 29.—N° 2984.

HALLAM, William, and MADGE, Henry Joseph.—"Improvements in the conversion of tin plate "shearings into tin plates."

The shearings are packed in frames or boxes, and pressure is applied thereto to render the bundle compact. The compressed bundles are secured with metal bands and heated in a furnace to a welding heat, after which they are squeezed or hammered into a bloom preparatory to being converted into tin plates.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 29.—N° 2985.

HANNART, Louis, and AUBERTIN, Nicolas Alphonse, the younger.—(*Provisional protection only.*)—"A new tool or mould for moulding or casting discs or wheels requiring to have letters, characters, "numerals, or other devices or designs formed around or about their circumferences in metal or other "materials."

The novelty of this invention consists in so constructing a tool or mould for the above purpose as that discs or wheels of metal or other materials requiring to have letters, characters, numerals, or devices, or designs cast upon and around their peripheries may have the same formed by casting from an engraved pattern in any quantities instead of having to engrave the circumference of each disc or wheel separately by hand as heretofore practised; it is proposed to effect this by making the engraved pattern or circular female die in segments radiating from a centre, and in operating thereon by a mechanical arrangement so as to draw the segments together so as to form an entire circular mould for casting into, and to separate or force back such said segments to enable the casting to be removed from the mould when set, after it has been cast.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 29.—N° 2986.

GIRDLESTONE, Henry John, and GIRDLESTONE, John Ward.—(*Provisional protection only.*)—"Improvements in treating ships and vessels to correct and prevent compass deviations."

According to this Provisional Specification the deviation of ships' compasses is corrected or prevented by polarizing portions of the ship or by depolarizing those portions only of the structure which are adjacent to the compass.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 30.—N° 2987.

EDWARD.—" Certain improvements in the manufacture of chandeliers and other gas fittings,
ecial reference to the pulley wheels, rosettes, and balance weights, smoke shades, argand burners,
similar parts used therein."
tion consists substantially in making the pulley wheels, rosettes, balance weights, ceiling plates,
er parts used in the construction of chandeliers and gas fittings hereinafter mentioned of
, china, jasper, or other vitreous substance, instead of making the same parts of metal, as is now

anner the gas fitting is rendered more ornamental than at present, and can be produced at a less

e articles above mentioned my invention has reference to the centres of bodies for chandeliers,
, or smoke shades for globes, all of which I propose shall be wholly composed of earthenware, or
s substance instead of being partly or wholly of metal, as at present.
also to make argand burners of earthenware or other vitreous substance instead of metal.
d. No Drawings.]

A.D. 1868, September 30.—N° 2988.

ORGE.—" Improvements in machinery for opening and closing, locking and unlocking, cart
turnstiles on railway level crossings."
tion relates to certain improvements on and in addition to a Patent granted to the present
e 9th February 1867, N° 369; and this invention consists in simplyfying the machinery and
e working parts more efficient without however dispensing with some of the most important
ed in the Specification of the Patent before referred to.
ovemements refer to improved apparatus for causing a passing train to open the gates as it
hem and to close them after it has passed. Similar apparatus is used for locking and unlocking
s for foot passengers on the level crossings.
s. 6d. Drawings.]

A.D. 1868, September 30.—N° 2989.

LLIAM, and MOORE, JOHN.—" Improvements in looms for weaving."
tion relates to the apparatus employed in looms to produce an amount of tension in the warp.
n is most applicable to the particular arrangement in which spiral springs, acting on cords,
pes, coiled around the ends of the warp beam, are employed. In this case one end of each
nnected to the said cord, chain, or rope, and the other end to one end of a cord, chain, or strap,
d of which is attached to the circumference of a pulley in such a manner as that when the pulley
e two straps are coiled on the pulley or uncoiled therefrom, according to the direction of rotation,
eel and pawl being used to lock the said pulley when the desired amount of tension is produced.
d. Drawing.]

A.D. 1868, September 30.—N° 2990.

ENRY.—(*A communication from William W. Rose.*)—" Means and apparatus for playing a new

consists in striking balls through hoops having swinging targets attached thereto, the motto or
ch said target having a different and progressive signification.
s. 2d. Drawings.]

A.D. 1868, September 30.—N° 2991.

TOR.—" Improvements in means and apparatus for propelling, steering, and turning ships and
els, and raising the same when stranded."
tion consists,—
a jet or jets of water in a contrary direction to the desired course of such ships or other vessels.
d. Drawing.]

A.D. 1868, September 30.—N° 2992.

JOHN.—" Improvements in candlesticks."
t is to securely hold candles of varying thicknesses. Clips on the upright of the candlestick are

closed by a threaded nut or by other means, so that they grasp the lower part of the candle. Or a spring or clip is pressed against the lower part of the candle by a screw.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 30.—N° 2993.

LAMBERT, JOHN.—(*Provisional protection only.*)—" Improvements in apparatus for raising water."

This invention consists in an arrangement of apparatus whereby the reciprocating action of a hollow air-tight piston or plunger is unimpeded by the necessity of raising a column of water in the ordinary way, but is caused to act in a permanent column of water, with compensating or balancing pressures all round the said hollow plunger.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 30.—N° 2924.

LAFARGUE, ALPHONSE.—" Improvements in gauges for indicating the pressure of steam and other " fluids."

The fluid acts on a piston, the rod of which gives motion to a pointer and acts on weighted levers raised by the pressure exerted. An extra or dead pointer moved forward by the first indicates the pressure at blowing off or when the pressure is relieved. A whistle also indicates any desired pressure.

[Printed, 8*d*. Drawing.]

A.D. 1868, September 30.—N° 2995.

RICHARDSON, WILLIAM.—" Improvements in machinery for burring or cleaning and preparing wool, " cotton, and other fibrous materials."

To a series of prongs or spikes a reciprocating or travelling motion is imparted, while at the same time they are caused during their forward movement to rise through a grid on which the material rests and then to be withdrawn therefrom.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, September 30.—N° 2996.

NEWTON, WILLIAM EDWARD. — (*A communication from Norman Cutter.*)—" Improvements in treating " metals for the purpose of separating from them various impurities or foreign substances."

The iron or steel or other metal is placed for some hours in a compound of cyanide of potassium and soda in a state of fusion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 30.—N° 2997.

NEWTON, WILLIAM EDWARD.—(*A communication from Garret Peter Bergen and Charles Thomas Beinbridge.*)—" An improved scissors sharpener."

The sharpener is a circular or disc shaped file, which may be held by the finger and thumb and rubbed along the edge to be sharpened.

[Printed, 6*d*. Drawing.]

A.D. 1868, September 30.—N° 2998.

JOHNSON, JOHN HENRY.—(*A communication from Henry Hannen, Benjamin Franklin Pine, and Thomas Woods.*)—" Improvements in the manufacture of white lead, and in the production of carbonic acid gas for " the said manufacture, and for other useful purposes."

The first part of this invention consists in subjecting metallic lead to the action of carbonic acid gas in a close chamber and then to a spray of dilute acetic acid, the gas being at such a temperature that a proper degree of heat is maintained within the chamber without the use of heating apparatus, the metallic lead during its period of conversion into a carbonate being subjected to solutions of chloride of soda and carbonate of soda while in the same chamber which is lined with slate, glass, or other material capable of resisting the action of the acids. It is further proposed to use in conjunction with the said chamber a jet or jets of steam for the purpose of imparting heat and moisture thereto when required. The object of this part of the invention is to produce a chemically true carbonate of lead of a greater density, purity, and whiteness, and at less expense than the ordinary white lead of commerce, which is in reality a hydrate of the oxide of lead with a small portion of carbonic acid; this result is mainly attained by an excess of carbonic acid gas which could not be obtained by the usual process of white lead manufacture.

The second part of this invention consists in the application of the above improvements in whole or in part to the Dutch process of manufacturing white lead by injecting into the spaces within the beds occupied by the pots steam, carbonic acid gas, and if necessary the spray or vapour of dilute acetic acid.

The third part of this invention consists in the mode or process described hereafter of producing from the waste products of combustion a pure carbonic acid gas for the manufacture of white lead and for other useful purposes.

In carrying out this part of the said invention the following arrangements of apparatus or its equivalent may be employed: It consists of a chimney of any furnace or fire-place provided with a sliding damper, below which is a pipe forming a communication between the chimney and a reservoir, the said pipe being furnished with a throttle valve. The contents of the said chamber are withdrawn by a fan and forced through a pipe into a closed vessel, the said pipe extending nearly to the bottom of such vessel, and having a number of small lateral perforations made therein. Water impregnated with chlorine is introduced into the said vessel through a funnel and feed pipe in such quantities that there shall be within the vessel a space above the liquid for the accumulation of carbonic acid gas under pressure caused by the action of the fan.

This gas is discharged and distributed through a pipe for that purpose to white lead making or other apparatus in which a pure carbonic acid gas is available for any manufacturing purposes.

A trycock is used for determining the height of the chlorinated water in the vessel, and a cock is provided through which the contents of the vessel may be discharged.

In using the above described apparatus the throttle valve is closed and the damper in the chimney permitted to remain open until the fuel in the furnace or fire-place is thoroughly ignited, when the damper is closed, the throttle valve opened, and the fan set in motion.

The unconsumed gaseous products of combustion, accelerated by the exhaustive power of the fan, will rush first into the closed chamber or [*reservoir**] where particles of dust and refuse matter are deposited, owing to a screen of perforated plate or wire gauze at the entrance of the pipe leading into such closed chamber; after passing through this screen the gas is forced through the pipe leading to the chlorinated water in the said vessel, which water it permeates, and by which the gas is purified and converted into a pure carbonic acid gas available for the manufacture of white lead and for other useful purposes. The purified gas accumulates under pressure caused by the fan in the said vessel, from which it is consequently forcibly ejected through the distributing pipe.

[Printed, 10*d*. Drawing.]

A.D. 1868, September 30.—N° 2999.

DALRYMPLE, George Augustus Frederick Elphinstone.—(*Provisional protection only.*)—"Improvements in machinery or apparatus for clipping horses, shearing sheep, and other similar purposes, which improvements are also applicable to reaping and mowing machines."

The feature of novelty which constitutes this invention is the arrangement and application of circular or segmental revolving knives for shearing sheep, clipping horses, and for reaping crops or mowing grasses.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 30.—N° 3000.

POWERS, Orville Watson.—(*A communication from Greenleaf Stackpole.*)—(*Provisional protection only.*)—"Improvements in sewing machines, applicable to other machines worked by foot power."

This invention consists in providing an auxiliary power for sewing machines applicable also to other machines worked by the treadle in order to assist the operator by augmenting or multiplying the power applied to the treadle in the ordinary manner.

The object of this invention is to reduce the labor of running sewing machines and other machines worked by a foot treadle to the lowest point compatible with the perfect government of the movements of same by means of the treadle operated in the ordinary manner, and whilst always necessarily insufficient in itself to propel the machine and entirely subordinate to and under the control of the treadle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 30.—N° 3001.

OOLLATT, Joseph, and **DODDS**, William Brown.—"Improvements in apparatus for obtaining motive power and for propelling vessels."

According to this Provisional Specification weights acting through levers are caused to give continuous otary motion to an axis for propelling and other purposes.

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* The word "reservoir" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

recess from which the old cap was removed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, September 30.—N° 3003.

STEVENS, Bryan William.—" Improvements in the picker spindles or guide bars
" weaving."

According to this invention the iron picker spindles or guide bars are made hollow or tubu
coated with glass or enamel instead of being made of solid bars as is usual. By making the
or bars hollow or tubular the glass or enamel applied thereto in consequence of the small amou
to be heated is rapidly fused, and a continuous and uniform coating readily and with certain
The spindles or bars are also smoother and more truly cylindrical in figure than ordinary spindl

[Printed, 8*d*. Drawing.]

A.D. 1868, September 30.—N° 3004.

BECKS, Arthur Thomas, and **JOHNSON**, George.—(*Provisional protection only.*)—" In
" in the manufacture of rouge and polishing powders."

This invention consists in manufacturing rouge and polishing powders in the following
waste acid solutions of iron obtained in manufacturing processes. To the waste iron solutions
alkaline earths are added, by which the oxide of iron is precipitated. The oxide of iron is sep
the clear liquid by decantation or filteration, and is then washed, next dried, and afterwards hea
raise it to the state of peroxide of iron and give it the required shade of color. It is then grou
powder, and when necessary rewashed or levigated in the usual manner. By mixing peroxide
peroxide of tin an excellent powder for polishing glass is made.

[Printed, 4*d*. No Drawings.]

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For the Quarter ending 31st December 1868.

A.D. 1868, October 1.—N° 3005.

IER, Thomas.—(*Provisional protection only.*)—"An improved device for supporting the ends of
ers for blinds, maps, and other articles."

said improvements consist chiefly in the peculiar construction of a device which is used instead of
dinary pulleys and blanks for carrying the pivots of rollers for blinds and other articles, by which
the roller is supported excentrically to the axis whereon it turns. I construct the said device with a
pin or pivot on one side; the other side of the said device is provided with a socket to receive the
f the roller. When the said pivots are properly fitted in their bearings the preponderating weight of
ller throughout its length will be on one side of the centres whereon it turns, and when the blind or
article is attached to the roller and wound or coiled upon the same the said blind or other article will
or rest in any position in which it may be adjusted. The device on one end of the roller is provided
leep flanges and forms a pulley to receive a cord for raising the blind or other article, which cord
rranged that it is coiled or wound upon the pulley when the blind or other article is lowered.

rinted, 4*d*. No Drawings.]

A.D. 1868, October 1.—N° 3006.

ITON, Henry.—"Improvements in the manufacture of artificial stone and slate, and in colouring
preserving the same, part of which are also applicable to the preservation of walls and other
faces."

roducing fibrous and metallic substances into the body of the stone or slate for the purpose of rendering
gh and difficult to break; colouring the stone or slate by the application of suitable chemical
ons; applying a solution of paraffine to preserve the surface from the effect of atmospheric influence.

rinted, 4*d*. No Drawings.]

A.D. 1868, October 1.—N° 3007.

SFIELD, George Tomlinson.—(*A communication from John Thomas Waring.*)—"Improvements in
manufacture of tufted or pile fabrics, and in machinery for manufacturing the same."

ording to this Complete Specification a tufted fabric is made wherein the body is composed of felt and
fts projecting therefrom are not felted; the tufts are united with the body and made to form a part
fabric by the process of felting.

o a tufted fabric is made wherein tufts that have been introduced in a back of previously manufactured
either woven or felted through perforations in the same are secured by a process of felting either with
hout an additional back.

inted, 2*s*. 10*d*. Drawings.]

A.D. 1868, October 1.—N° 3008.

SCALLY, John Dillon.—" Improvements in apparatus for filling casks."

The apparatus described in this Provisional Specification consists of a flanged stopper fittin bung hole of a cask having two tubes passing through it.

The larger of these tubes admits liquid to the cask; the other is for the escape of air from the c

[Printed, 6*d*. Drawing.]

A.D. 1868, October 1.—N° 3009.

KROMSCHROEDER, John Frederick Gustave.—" Improvements in apparatus for gen " inflammable gas or vapour suitable to be burnt at gas burners to yield light and heat."

According to this Provisional Specification air is forced by apparatus driven by clockwork into containing a volatile hydrocarbon oil. The air is led by a pipe from the chamber to a burner at to be burnt. Means are described for regulating the flame.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 1.—N° 3010.

MURRAY, John, and HARLING, Oliver.—(*Provisional protection only.*)—" Improved means " ratus for consuming or preventing the escape of smoke from steam boiler and other furn " collecting for utilization the waste products of combustion of the fuel.

The novelty consists,—

In the application of a fan placed in the flue to force the smoke and gases through or into water to a tank, and jets of steam and water are inserted into the flue so as to obtain a shower of water to gases or vapours arising from the water tank.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 1.—N° 3011.

CRICHTON, David, DONBAVAND, William, and CRIGHTON, Duncan.—" Improvem " looms for weaving."

This invention consists in improved arrangements for diminishing the friction of the swells on the and for regulating the movement of the shuttle in the process of weaving.

[Printed, 10*d*. Drawings.]

A.D. 1868, October 1.—N° 3012.

CHARDON, Claude Benoit.—(*Provisional protection only.*)—" Improvements in the constru " locomotive engines adapted for railroads and common roads."

The novelty of this invention consists in constructing the driving wheels of locomotive engine projecting pieces fixed to their peripheries at equal distances asunder, so that as the wheels rotate pieces shall operate in the same manner as the feet of a horse in the act of drawing a load, the projecting pieces being so arranged that three of them are always in contact with the surface of the way at one and the same time, and two always exerting their leverage at one and the same time to load.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 1.—N° 3013.

LEGG, Robert.—(*Letters Patent void for want of Final Specification.*)—" Improvements in the manu " of twisted or spun tobacco, and in machinery and appliances used therefor, a part of which is app " to the winding of all twisted fabrics."

The substitution of rollers or advancing surfaces suitably arranged for the old spinning table and board.

The combination with the above of a new differential traverse driving movement, and with a flyer, and bobbin, for spinning and winding tobacco.

The general arrangement of the machine in the manner and for the purpose described.

The part styled a differential traverse driving movement being applicable to the winding of all of twisted fabrics on bobbins, spools, or reels.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 1.—N° 3014.

, **Jean.**—(*Provisional protection only.*)—" Improvements in the mode of and apparatus for g motive power by means of the wind."

ention consists in a machine intended to utilize in the most complete manner the motive power d, whatever may be its force or direction, and to regulate the same either automatically, lly, or by hand, according to the effect desired.

ring wheel or motor upon which the wind acts is formed with vanes, helicoïds, winding sur- nclined planes, more or less in number according to the size of the wheel, and so arranged ze as completely as possible the motive power of the wind. These vanes are attached to a in driving shaft by two or more horizontal plates keyed on the shaft, or by a suitable number The driving wheel thus constructed is placed in a polygonal belvidere or cage fixed on the rt of the works which it is intended to drive. This belvidere is formed of a series of upright or less in number according to the dimensions of the wheel, and covered with a roof.

comprised between the posts and corresponding to the height of the vanes is open; the lower ed by wainscoting or woodwork.

es made in the lateral faces of the posts slide panels moved by cords or chains passing over leys, and having counterpoise weights at their ends. By means of these panels the whole or the openings between the posts can be closed.

4*d.* No Drawings.]

A.D. 1868, October 1.—N° 3015.

Abner.—" Improvements in chairs, cages, or hoists used in mines, shafts, or lifts, and in the ry or apparatus employed therein."

r, cage, or hoist (hereafter called cage only) is provided at each side with a perpendicular bar; hese bars, near the upper and lower ends, are secured clip plates or shoes, which slide upon the ide rods of the mine or lift. Above the upper clip plates, on each side of the cage, are a pair of ir equivalent, and between them the guide rods of the mine or cage lie. To each corner of the ched a strong chain; these chains are connected together above the cage by a ring, to which is fifth chain lying over the centre of the top of the cage. To this chain is secured the centre of in, each end of which is passed through one or more holes in the top or cover of the cage; the cured to two bars or to an open link, the lower ends of which are hinged upon a short bar passed e curled end of the lower plate of a flat compound spring, composed of several plates overlying This spring is secured to the under side of the top or cover of the cage, and upon the outer short horizontal bars. At each end of the spring are short levers working upon pins in the ir equivalent in such manner that when any weight is upon the cage, or the cage is in the act of ed or raised, these cams will always be clear of the guides or ways; but upon the hoisting rope or ing the springs will immediately act upon the cams, and they will firmly clutch the guides or old the cage suspended. The ring attached to the five chains is suspended to the hoisting chain hooked plates which lie between two other plates; the hooked plates are of such shape that sides protrude beyond the sides of the outer plates, so that in case of overwinding the sides of hooked plates will be pressed by the inner edge of an iron ring carried by a beam exactly over f the inner shaft or hoist.

1*s.* 10*d.* Drawings.]

A.D. 1868, October 1.—N° 3016.

, **William Edward.**—(*A communication from Emanuel Weiss.*)—(*Provisional protection only.*) roved process for decorticating grain."

r cuticle of the grain is softened by being moistened by an alkaline solution.

4*d.* No Drawings.]

A.D. 1868, October 1.—N° 3017.

illiam Robert.—(*A communication from Augustus Irel Ambler, Charles Edwin Rittenhouse, and met Preston.*)—" An improved mode of constructing the door frames of furnaces for steam rs."

tion relates to furnace doorways for locomotive and other steam boilers which have an internal ire box, and the nature of the said invention consists in a novel method of joining together the furnace plate and the outside plate of the boiler around the fuel aperture or door of the furnace. The ouside plate of the boiler is turned in and forms a flange around the door of the furnace. The plate of the furnace or fire box has its edges around the said door turned outward, and the two flanges thus formed when the boiler is put together overlap each other and are tightly rivetted together.

[Printed, 6*d.* Drawing.]

A.D. 1868, October 2.—N° 3018.

CALVERT, Francis Alton.—" Improvements in machinery for opening, burring, cleaning, and carding " cotton, wool, and other fibrous substances, also for opening twisted yarns and woven fabrics."

My improvements in machinery for opening, burring, and cleaning consists, first, in combining one, two, or more burr cylinders with a brush or brushes, and with one or more fluted or channelled guards; a vibrating grate is placed below the whole.

My improvements in machinery for carding and opening twisted yarns and woven fabrics consists of three toothed cylinders combined with a worker or retainer, one of the said cylinders having a series of small workers and with a vibrating grate.

Another part of my invention consists in an improved mode of constructing the toothed wire cylinders patented by me on the 18th January 1849, N° 12,427.

My present invention consists in making the toothed wire flat without rib, and securing it on the cylinder by an independent wire.

The last part of my invention consists in grinding toothed wire cylinders with concave blocks of grindstone or clay mixed with ground glass, quartz, or other suitable substances.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, October 2.—N° 3019.

HOLCROFT, George, and DACK, William Nathan.—(*Provisional protection only.*)—" Certain " improvements in steam engines."

This invention consists in certain improvements upon the cut off gear patented by us on the 11th day of December 1867, No. 3512. The tube, with right and left hand screws, forming part of the cut off gear is now connected to the eccentric rod or its equivalent instead of being a fixture as before; also in the application of a plate between the slide and cut off valves; also in varying the point of cut off by a lever or levers passing between a sliding block, the position of which is varied by the governor; also in making the governor rod in two parts; each with a head acted upon by springs contained in a box.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 2.—N° 3020.

JENKINS, James, JENKINS, Frederick, and JENKINS, Samuel.—(*Provisional protection only.*)— " Improvements in the construction of sleeve links, the same being also applicable to other articles of " jewellery."

The body of the link consists of a plate or bar of metal, at one end of which is fixed a vertical pin, the other end being provided with an inclined groove, in which is a hole. A moveable metallic tongue, with the two ends thereof bent at right angles to its length, is mounted by one end thereof on the pin, on which it is free to move horizontally. The other end of the tongue traverses the inclined groove and takes into the hole in the main plate or bar.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 2.—N° 3021.

O'CONNELL, Edward. — (*Provisional protection only.*)—" Improvements in apparatus for supplying " nourishment to infants, invalids, and others."

This invention consists,—

Firstly. In preventing the collapse of the teat of such apparatus by suction.

Secondly. In means for the admission of air into the bottle, the liquid at the same time being prevented from escaping.

Thirdly. In making the shield or mouth guard of soft and flexible material; and,

Fourthly. In causing the cap to fit closely on to the neck of the bottle.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 2.—N° 3022.

ERGUE, Alphonse.—"An improved kiln for burning clay, lime, plaster, and other materials."
nvention consists of a kiln having four independent compartments, the fire-place and chimney the centre and shut off at pleasure from one or other of the compartments by dampers.
lvantages are that a different material may be simultaneously baked or burnt in each compartment, of which may be graduated; that only one, two, or three of the compartments may be used, as equired; and that one compartment may be cleared or filled while the others are in operation, the first shut off from such compartment and the heat therein being distributed in the other com-s by currents of air.
d, 10*d*. Drawing.]

A.D. 1868, October 2.—N° 3023.

)OD, Nicholas.—" Improvements in mowing and reaping machines."
vention consists in the application of a circular saw or saws for cutting all kinds of growing the continuous rotary motion of such saw or saws. The cutting wheel or circular saw works lly close to the ground against the standing crop, being driven by gearing from the driving the machine. The vertical saw shaft also communicates motion to an inclined shaft placed rrying a set of revolving rakes for laying the corn or grass in sheaf or swath. These rakes ombination with an inclined platform fixed just above the saw cutters.
l of a fixed inclined platform and revolving rakes I may use a horizontal circular platform ust above the circular saw and under a fixed delivery board at back.
tter may either be a circular saw or a wheel with teeth or knives fixed to its periphery.
d, 8*d*. Drawing.]

A.D. 1868, October 2.—N° 3024.

, Robert Francis, WALKER, Joel Eaton, and WALKER, William George.—" Improve-applicable to ratchet and crank braces and other tools or apparatus wherein centre points and are required."
vention consists essentially in the application and use to and in crank and ratchet braces, lathes, tools or apparatus requiring "centres" or pivots of rotation of loose centres in lieu of fixed centres fore, the object being to reduce friction and thereby increase the durability of the "centre." The "centre" may be made of steel, gun metal, or other suitable hard metal, alloy, or mineral substance, uble pointed, the inner point being free to rotate in a female centre, which may be either fixed or These loose centres may obviously be constructed in various forms according to the tool or to which they are to be applied; but in all cases they are left perfectly loose or free to revolve e box or holder containing such loose centre.
d, 8*d*. Drawing.]

A.D. 1868, October 2.—N° 3025.

Stephen, and REDGATE, William.—(*Provisional protection only.*)—" Improvements in the cture of lace made on bobbin net or twist lace machines."
vention relates to a method of making or manufacturing a new or improved ground or net mainly are called imitation or blond laces in conjunction with finings, weavings, and thick threads.
vention consists in making on bobbin net or twist lace machines what is commonly known and d in the lace trade as a straight down net; that is to say, making net in which the pair of warp hat form the crossings or closing of the hole of net shall merely pass from one pair of bobbin o the next or immediate neighbouring pair of bobbin threads, and after twisting down the side of of the ground or net they will return back to their original pair of bobbin threads, and will then rn the other side of the hole of net by means of a single warp thread, or of one warp thread to in thread.
culiar novelty consists in making the pillar of the ground or net with two warp threads and two reads, while the crossings or closing of the hole is composed of a single pair of warp threads.
d, 4*d*. No Drawings.]

A.D. 1868, October 2.—N° 3026.

AN, Clinton Edgcumbe.—(*A communication from Mathias Paraf-Javal and Eugene Paraf-Javal.*) ovements in the treatment of fatty matters in order to harden them and apply them to the manu-of candles, soap, and other uses."

disengagement is nearly terminated; the destruction by calcination of the organic bodies co
lyes which have been used, and afterwards recaustifying them for use again (a good purifi
sidered indispensable to the success of the operations); the regeneration by means of lime c
contained in the soap in place of regenerating them by their previous conversion into sulphat
following the Leblanc process; the transformation of the soluble soaps into calcareous so
influence of heat and under pressure to facilitate the formation and the separation of the c
(whatever be the soap to be transformed, and whatever be the object of the tranformation, i
this invention if it be effected under pressure); the employment of the residues of impure lyes
facture of soft soaps; the employment of the calcareous hardened soap for the calcareous sa
greases and fats; and the application to the manufacture of candles, soaps, and colors of th
hardened and produced by the means hereinbefore described.

[Printed, 6*d*. No Drawings.]

A.D. 1868, October 2.—N° 3027.

PARSON, Thomas Cooke, junior.—" Improvements in skates."

The skate is fixed to the heel by a movable lever attached to the end of the sole plate, wh
heel into fixed spikes at the back of the heel plate, and is adjustable to any size. The sole pl
by laterel movable stays adaptable to any width; attached to these is a band crossing over th
sole and heel plates may be in one piece.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 3.—N° 3028.

ROSE, Edouard Fourmaux.—(*Provisional protection only.*)—" Improvements in machinery
" and peeling flax, hemp, and other filamentous plants."

The subject of the present invention is a combined breaking or crushing and peeling machin

The substance to be crushed and peeled is conducted to three couples of rollers (arranged i
frame) by means of an endless band passing over two wooden rollers. On leaving the crushing
passes over a grooved steel blade placed horizontally between the uprights of the frame of th
from thence it arrives between two pairs of fluted cylinders which strip it of its straw without
any waste.

On leaving the machine the flax or hemp or other substance is ready for spinning.

This machine may be worked by hand or otherwise.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 3.—N° 3029.

SHRIMPTON, Zaccheus.—" Improvements in packing or putting up needles for sale, and
" receptacles for needles."

axis when drawn through the water or immersed in a stream; and a cylinder of wood or other suitable material, on which is fitted three or any other suitable number of blades passing spirally round the same, which is also provided with a number of fan or oblique propeller blades for causing the same to rotate when drawn through the water or in a stream, and the cylindrical brush and compound revolving scraper are each fitted on the fore end with a swivel link for attaching lines thereto.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 3.—N° 3031.

ROGERS, John.—(*Partly a communication from Laurence Ried.*)—"An improved mode of reviving "boneblack after it has been exhausted by sugar refining or other manufacturing operations."

This invention consists in the use of superphosphate of lime for neutralizing any excess of lime in exhausted boneblack or animal charcoal, and a solution of nitrate of ammonia for removing organic matter therefrom and increasing the porosity of exhausted animal charcoal, thus enabling the same to be again used for sugar refining and other manufacturing purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 3.—N° 3032.

WEST, Daniel.—"An improvement in presses for packing cotton, hemp, wool, and other goods."

The improvement in presses described in this Provisional Specification consists of making both the bed and follower between which the bale of goods is compressed with concave surfaces to mould the top and bottom of the bale in the press to nearly the convex form the bale assumes when taken out of the press.

[Printed, 8*d*. Drawings.]

A.D. 1868, October 3.—N° 3033.

NEWLANDS, Benjamin Edward Réina.—"Improvements in the manufacture of manure and in the "production of salts of ammonia."

This invention relates, firstly, to the manufacture of manure from organic matters containing nitrogen; and, secondly, to the production of salts of ammonia. In carrying out the first part of my said invention I take any organic matter containing nitrogen and treat it with vitriol at an elevated temperature, and allow the mixture to stand till the organic matter has been thoroughly acted upon and converted into a black mass; I then add native carbonate of magnesia or magnesian limestone. By this means I obtain a dry substance (containing a high per centage of nitrogen and sulphate of magnesia), which I use either by itself or mix with superphosphate in the course of its manufacture or afterwards, so as to form a manure. In some cases I prefer to wash the acid out of the black mass before referred to and use it (without the addition of carbonate of magnesia or magnesiam limestone) as a manure. Under the second head of my invention I utilize the nitrogen contained in the impure sulpho-cyanide of ammonium obtained by washing oxide of iron (generally known as spent oxide of iron) which has been used for purifying gas in the following manner:—I distil off the ammonia it contains (which I collect in an acid) by boiling it with lime, and I then take the sulpho-cyanide of calcium remaining in the distilling apparatus, and if dry mix it with slaked lime, but if wet I use dry lime, and submit the mixture to dry distillation, collecting the ammonia evolved in an acid. Or I add slaked or dry lime to the sulphocyanide of ammonium, according it may be in a dry or wet state, and submit the mixture to dry distillation, collecting the ammonia given off as before described. I also propose to convert the nitrogen contained in sulpho-cyanide of calcium into ammonia by dry distillation with slaked or dry lime, as the case may be, and collect the ammonia in the usual way. In any of the above cases where ammonia is evolved it may be passed into nitrogenized organic matter which has been treated with vitriol as before referred to under the first head of my invention, whereby a highly ammoniacal substance is obtained which may be used in the manufacture of manures.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 3.—N° 3034.

COWPER, Edward Alfred.—"Improvements in the manufacture of iron and steel, and in the apparatus and materials used for that purpose."

This invention consists in the use of a flat "float" somewhat hollow on the under side, filled in with chemicals or "physic" to act upon liquid iron or steel; also in a new "physic" composed of soft or soluble glass containing soda, potash, manganese, &c.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 5.—N° 3035.

HOWDEN, James.—(*Provisional protection only.*)—"Improvements in the use and appli
"substances for preventing the escape of heat from the surfaces of cylinders, boilers, and other
"apparatus containing heat."

My invention relates chiefly to the employment of plaster of Paris or other non-conducting
having similar properties, rendering them capable of being run into moulds or spaces in a liqui
liquid state, and of rapidly solidifying thereafter, for enveloping the surfaces of cylinders, boilers,
other vessels containing heat.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 5.—N° 3036.

HEILMANN, Rudolph, and HART, Peter.—"An improved method of utilizing the fumes
"evolved during certain chemical operations."

Our invention consists in utilizing the waste oxides of nitrogen which are given off in the manu
sulphuric acid and in other chemical processes.

We employ the oxides of lime or magnesia to absorb the oxides of nitrogen, thereby producing
nitrate of lime or magnesia, which by the application of heat are made to evolve the previously
oxides of nitrogen.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 5.—N° 3037.

JOYCE, John Barnett.—(*Provisional protection only.*)—"Improvements in or applicable to
"of steam engines, part of which improvements is applicable to couplings of shafting and to oth
"purposes."

The novelty consists in—

Firstly. Coupling right and left handed screws for expansion valve rods by screw couplings, as d
and working such valves by two ratchet wheels and catches operated by a rod in connection
governor.

Secondly. The application and use of these couplings for jointing together two or more le
shafting or other rods, bars, or spindles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 5.—N° 3038.

LAKE, William Robert.—(*A communication from Hiram Tucker.*)—(*Provisional protection only.*)-
"improved extension chandelier."

In the said invention there is attached to the top piece in which is fixed a ring or hook for the pu
of suspension, and which top piece may be made of any ornamental form, a central rod, and also at su
points beyond the said rod and at equal distances therefrom closely coiled helical springs. The bottom
of the chandelier to which the lamps or burners are attached is provided with a vertical tubular stem
surrounds the rod depending from the top part, and the springs before named are attached to the b
part of the chandelier, the said springs being so proportioned to the weight of the bottom or movable
of the chandelier that when such part is located about half way between its extreme points of move
there shall be a condition of equilibrium. On the top of the chandelier tube a piece is secured which
for the fulcrum of a lever, one arm of which is perforated with a hole a little larger than the diameter
rod before mentioned, while the other arm receives at its end a string, chain, or other means by whi
position of the lever may be changed, the lever being so made that in its normal condition its arm em
the rod inclines downward, the effect of which arrangement is to cause the lever to resist any
tendency of the bottom of the chandelier caused by the pull of the springs when they are extended b
the amount due to the weight suspended thereupon.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 5.—N° 3039.

GALAND, Charles François, and SOMMERVILLE, Alfred.—"Improvements in repeating
"arms."

One part of this invention consists principally of mechanism for extracting simultaneously the w
the cases of the exploded cartridges from the chambers of the revolving barrel. The revolving an
barrels are made capable of sliding on an axial rod, a disk to which the revolving barrel is connected

situated between the said revolving barrel and the break off. The disk has a series of holes in it equal in number to the chambers of the revolving barrel, the said holes being chambered out to receive the rims of the cartridges. The parts described are actuated and fixed in their places by a lever. When the lever is depressed the disk, revolving barrel, and fixed barrel are caused to slide on the axial rod from the break off. The disk having receded the required distance from the break off it comes to rest, the fixed and revolving barrels continuing to move. As the revolving barrel moves from the now fixed disk the whole of the cases of the exploded cartridges are simultaneously withdrawn or extracted from the chambers of the revolving barrel by the fixed disk. By returning the revolving barrel to the disk fresh cartridges may be introduced into the disk and barrel, and the said disk, revolving barrel, and fixed barrel returned to and fixed against the break off by the lever described.

Another part consists principally in making the mechanism of repeating fire-arms capable of ready attachment to or detachment from the barrel of an ordinary gun or rifle or stock or other support. The revolving barrel and lock are carried by a frame, on the under side of which are tenons or fastenings for securing them to the barrel or support. The lock consists of a long trigger lever and a hammer, the trigger lever carrying arms for lifting the hammer, working the revolving barrel, and fixing the hammer at half cock. The trigger lever is also made to fix the barrel during discharge. The repeating mechanism is fixed in such a position on the barrel of the gun that the person holding the gun can readily reach the trigger and discharge the said mechanism after the gun has been used.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, October 6.—N° 3040.

BELLHOUSE, Edward Taylor, and DORNING, William John.—"Improvements in hydraulic "presses employed in the packing of cotton or other materials or substances."

This invention relates to hydraulic presses employed in the packing of cotton, wool, jute, hay, or other similar substances or materials. Three rams are employed arranged in a row, the two outer rams having the full stroke or lift of the press, the central ram, which is larger in diameter than the outer rams, having a stroke sufficient only for the final compression. The two outer rams only are "pumped up" until a greater pressure is required than the said rams can furnish. An intermediate piece, which is suspended from a crane or carriage, is then moved into a position between the central ram and the under side of the table, and all three rams are pumped up simultaneously, the intermediate piece transmitting the pressure of the central ram to the table. If it be required, three or more outer full lift rams may be employed in connection with the short central ram, or other means may be employed to produce the first compression.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 6.—N° 3041.

SIMONS, Edward.—"Certain improvements in 'breaks,' applicable to railway and other carriages."

The novelty of the invention consists in supporting in a suspended position above the metals or rails a transverse rod placed immediately behind the carriage wheel. This rod is supplied with blocks or shoes that when lowered are guided down concentric curved slots formed in brackets secured to the carriage frame that guides them on to the rails in such a position that they form a rest or drag for the wheels that prevent their revolution, thereby retarding and stopping the train.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 6.—N° 3042.

TCHEPELEVSKY, Nicolas.—(*A communication from Otto Carl Ramstedt.*)—(*Provisional protection only.*)—"An improved enamel applicable to wood, paper, textile fabrics, and other surfaces to render them "impervious to spirits, oils, gases, or other similar fluids."

The object of this invention is to manufacture an enamel insoluble in spirit, oil, or water, and to apply the ame to the interior of casks or other vessels made of wood, paper, or textile fabrics, and intended to contain ydrocarbon oils, volatile spirits, or other quickly evaporating fluids, so as to render them impervious and revent the loss of their contents by leakage or evaporation.

The enamel consists of two separate solutions—*Firstly*, a warm solution of animal size, with the addition f glycerine and white alum; and, *secondly*, a chemical production invented in Russia, and known there as Ramstedt's verdine," consisting of a mixture of sulphate of potash and sulphate of chromium dissolved in cold water.

[Printed, 4*d*. No Drawings.]

GRAVELEY, GEORGE.—" Improvements in steam pumps and other engines actuated by stea " motive fluid, and in combining sea water distilling apparatus with steam pumping and stea " apparatus."

1. The slide valve of steam or other cylinders is moved by a crank or bent arm or excentric act rod connected with the piston rod.

2. The barrel of a pump worked by steam generated from sea water is surrounded by a wor whole is enclosed in a box. This worm receives steam from the boiler, as well as the exhaust the cylinder. The pump draws water from a tank, discharges it into the box, and then out by a steam in the worm is thus condensed into fresh water, which is drawn off. The box may enclose pump barrel for feeding the boiler with water drawn from the box, this pump being worked by a from the plunger rod of the other pump.

3. Sea water distilling apparatus is combined with steam cooking apparatus, consisting of holl into and through which the steam is led. These vessels are suitable for being placed in empty cas vessels so as to cook food placed therein.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 6.—N° 3045.

GILBERT, FRANCIS STEPHEN, and WHITE, WILLIAM GEORGE. — (*Provisional protectio* " Improvements in the manufacture of self-adjusting spanners."

The adaptation of a lever at the end of the shifting jaw bar to open or shut the spanner; the male and female dovetail in the two bars to correspond with each other, thus forming a close between them and rendering them stronger; also the addition of a racked clamp to fix the mov in any required position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 6.—N° 3046.

STRAKER, ALBERT GEORGE.—(*Provisional protection only.*) — " An improved kind of sampl " envelope for the transmission of samples or patterns of merchandise by post."

The novelty of this invention consists in making or forming out of paper, linen, canvas, or material an envelope or bag open at end or side, with a flap having two, three, or more lappels, gummed in either one, three, or more operations, the under side of the flap being gummed or In using the said envelope or bag the sender attaches the flap or lappel at the two ends only ma on Drawings (star). The post official, to examine the contents, opens the centre portion of the along the white lines, and secures down again for the safe transmission of the contents of the said or bag.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 6.—N° 3047.

RAMSAY, ROBERT.—" Improvements in the construction of knee caps for horses."

worked with high pressure water or other suitable fluid from mains, accumulators, or direct from force pumps, either horizontally or vertically, such machinery being adapted for the purposes of stamping, punching, and other uses where high pressure is requisite.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 6.—N° 3049.

STĚFFANSON, HÅKAN.—(*Provisional protection only.*)—" Improvements in machinery for sawing wood."

An elastic cushion of air contained in a cylinder receives the shock of the crosshead of the reciprocating saw frame at each end of the stroke.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 6.—N° 3050.

WILLANS, JACOB GEOGHEGAN.—" Improvements in the manufacture of iron and steel."

According to this Provisional Specification granules of cast iron or cast iron in other form is immersed in a liquid which removes or neutralizes sulphur and phosphorus.

Also decarburetted granules are pressed into moulds. Also granules are decarburetted with oxide of iron, and then to the decarburetted mixture carbon or cast iron is added and the whole melted.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 6.—N° 3051.

ASPINALL, JOSEPH.—(*Provisional protection only.*)—" Improvements in telegraphic and other ropes or " cables, part of which improvements are also applicable in hardening the surface of india-rubber and gutta " percha."

This Provisional Specification describes forming telegraphic cables of hair or animal fibre, and also enveloping an ordinary rope or cable in hair or animal fibre. The hair or fibre is used to repel the attacks of marine boring animals. To harden gutta percha and pitch or similar composition silica or other similar hard powder is mixed with it, or a silicate may be mixed with it, the silica afterwards being freed by means of an acid, or a solution, such as chloride of calcium, may be applied to it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 6.—N° 3052.

JEFFREYS, JULIUS.—" Improvements in freezing, shipping, and preserving meat and other provisions, " and in the machinery and apparatus employed therefor."

According to this Provisional Specification the meat, together with a strong soup, is placed in air tight boxes, the construction of which is fully described, and in these boxes the meat is frozen hard. The boxes are conveyed into the ships, where they are stowed by apparatus which is set forth in detail, and they are kept cold by the circulation of artificially cooled currents between the boxes.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, October 6.—N° 3053.

ESKRETT, CYRUS.—(*Provisional protection only.*)—" Improvements in envelopes or 'hairs' used in " extracting oil from oleaginous seeds and oil cake making."

These envelopes or hairs are made of plates of iron, copper, or other materials with a rib on one side, together with straps for withdrawing the envelope from the press.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 7.—N° 3054.

WARREN, FREDERIC PELHAM.—" Improvements in apparatus for cooking and other purposes."

This invention consists in a novel combination and arrangement of three vertical boilers of peculiar form, and one large and two small ovens with steam cooking or drying closets, the whole arranged to be heated by the products of combustion from one fire-place, which fire-place is itself mainly formed by the boilers themselves, thus preventing the waste of heat and loss of time which occur in cases where other parts, such as cast iron cheeks, are used to form the fire-place. The boilers and large oven are so arranged within the casing of the apparatus as to form separate flues from the fire-place, which are peculiarly disposed so that one set of flues leading from its upper part covers or envelopes the upper parts of the boilers and large oven, thereby heating the same and simultaneously carrying off the smoke from the upper part of the fire-place, while a second set of flues leading from its lower part envelopes or surrounds the bottoms and lower portions of the large oven and boilers conducting to and heating them by the products of combustion from the

lower part of the fire-place. Between the backs of the boilers and large oven and the backs of
cooking or drying closets a space is left running the entire width of the apparatus, and having
central partition which divides it into two flues leading to the chimney, which flues receive the p
combustion from their respective sides of the fire-place after such products have passed throug
leading therefrom around the upper and lower portions of the boilers and ovens. Steam from
boiler is conducted through pipes or tubes arranged in the steam cooking closets so as to suppl
cooking utensils. Waste steam from the boilers is conducted away by special pipes provided for
The cover of the fire-place constitutes a hot plate, and the upper portion of the front of the f
furnished with moveable plates forming a hopper and blower. Provision is made for heating
separate tank or vessel when desired by steam, which passes from one of the boilers through a co
in the tank or vessel containing the water to be heated.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, October 7.—N° 3055.

JOHNSON, JOHN HENRY.—(*A communication from Jean Louis Delègue.*)—" An improved te
" applicable as blankets for printing presses and for other useful purposes."

This invention consists of a novel textile fabric which will be found useful as a substitute for th
blankets employed in printing presses, and may be applied to various other useful purposes, for ex
novel fabric may be used in machines for printing woven fabrics or textile materials either as a c
the rollers or as blankets. In manufacturing the improved fabric or blanket to which the in
tinguishes by the name of the "Delègue blanket," a warp of silk spun floss silk or cotton is
warp being worked by a satin tweel mount as is well understood by weavers. Combined with this
is a woollen weft also operated as for satin fabrics. The fabric thus produced is to be coated o
warp side or face with a solution of caoutchouc, so that the fabric presents a perfectly smooth a
surface on one side. The other face remains without any finish whatever, presenting the appea
fabric composed entirely of wool. The improved "blanket" or fabric possesses considerable str
solidity, and has one of its faces as even and smooth as paper, whilst by reason of the woollen w
only on one face considerable elasticity or yielding in the direction of the thickness of the fabric is
rendering it specially applicable to printing machinery.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 7.—N° 3056.

MARSHALL, DAVID.—" An improved packing for the tubes of surface condensers and other
" purposes."

The feature of novelty which constitutes this invention is the application of an india-rubber ring
having an annular groove or space formed at one end between the outer and inner periphery of the
tube, so as to form a kind of cupped ring, the edges of which will spread out under pressure and
a water and steam tight joint.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 7.—N° 3057.

SIEVWRIGHT, WILLIAM, junior, and WORRALL, GEORGE.—(*Provisional protection only.*)—" Im
" ments in apparatus for producing adjustable pressure on rollers used in the manufacture and finis
" textile materials or fabrics."

The feature of novelty which constitutes this invention is the arrangement and construction of le
which the pressure is produced by means of a weight, and rendered elastic by the introduction of a
spring, in contradistinction to levers in which the pressure is produced by means of a weight only,
means of a compressed spring.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 7.—N° 3058.

JOHNSON, JOHN HENRY.—(*A communication from John Whitin.*)—" Improvements in flyers emp
" in twisting or spinning cotton and other fibrous substances."

Providing a curved tube or passage for the roving through the upper part of the flyer distinct fr
socket by which the flyer is fitted to the spindle. Also making the centrifugal presser when em
readily detachable from the flyer arm and connecting the presser with the flyer arm by means of a spiral
and worm situate either at the upper or lower end of the flyer arm. By this means when turning on
the presser tends to detach from the flyer, and when turning the other way it stops by the presser arm

contact with the end of the flyer. The arm of the presser is situate below the opening in the flyer

d, 10*d*. Drawing.]

A.D. 1868, October 7.—N° 3059.

ITH, ROBERT THOMSON.—(*Provisional protection only.*) — "An improved manufacture of fire- and fire-resisting cement."

vention consists in manufacturing fire-bricks and fire-resisting cement from a mixture of "oil " and fire-clay.

oil still coke" is calcined and triturated into a powder more or less fine; it is then mixed with and made into bricks or used as a cement for manufacturing, luting, or coating any article to be to heat or fire.

eater the proportion of "oil still coke" to fire-clay, consistent with a thorough binding of the two s, the more heat resisting the brick or cement.

d, 4*d*. No Drawings.]

A.D. 1868, October 7.—N° 3060.

S, EDWARD THOMAS.—(*A communication from Louis Mure and Charles Clamond.*)—" Improved and apparatus for generating electricity by heat."

vention relates to a thermo-electrical pile in which a new substance called galena is used for g electricity by heat, the said galena being combined with iron by solder specially adapted for se.

d, 8*d*. Drawing.]

A.D. 1868, October 7.—N° 3061.

ER, WILLIAM.—" Improvements in warping or beaming machines."

vention consists,—

, in stretching wires across the machine in such manner that the threads are kept so near the levers luke is continuously cleared away.

ly and thirdly, in improved means for stopping the machine when one or more of the warp threads

ly, in preventing a sudden shock when the machine is being stopped. And,

, in enabling the machine to be driven forwards and backwards with one strap only.

d, 1*s*. 6*d*. Drawings.]

A.D. 1868, October 7.—N° 3062.

JAMES, and ARUNDALE, JAMES.—(*Provisional protection only.*)— " Improvements in shuttles." tures of novelty in this invention consist in a simple contrivance for actuating the tongue springs; rements applicable to such springs; and, further, in the means specified for preventing shuttles at the shoulders, and at the same time rendering them more durable.

d, 4*d*. No Drawings.]

A.D. 1868, October 7.—N° 3063.

N, WILLIAM EDWARD.—(*A communication from Thomas Crane.*)—" Improvements in knitting ery and in apparatus to be employed with knitting machinery."

ear reciprocating latch needles are arranged in a row parallel to each other and operated by means which causes the needles to advance and receive the yarn, and then recede to cast off the loops.

d, 2*s*. 2*d*. Drawings.]

A.D. 1868, October 7.—N° 3064.

N, JAMES.—" An improvement in the manufacture of wall papers and in apparatus used in such cture."

first place I print the required pattern "in the flat" upon the surface of the paper either in the manner or in the manner described in the Provisional Specification accompanying another petition e on the day of the date hereof.

prepare a block with a raised surface corresponding exactly with the raised pattern to be produced, ll the required lines and indentations thereon.

A.D. 1868, October 7.—Nº 3068.

DS, Westley.—" Improvements in cartridges."
ng to this Provisional Specification a metallic capsule is rivetted to a solid disc base of two
by means of a hat cap, and a cup is inserted inside the capsule to cover both the outer and the
les of the base; or this cup may be omitted.
nes the hat cap is omitted and a projection on the otherwise flat face of the disc base forms the

l, 6*d*. Drawing.]

A.D. 1868, October 7.—Nº 3069.

M, Robert Hunter.—(*Provisional protection only.*)—" An apparatus or instrument for drawing
diating from a known centre, particularly adapted for the use of draughtsmen in drawing perspec-
ws."
to the ordinary parallel rule running on rollers, but having one roller larger diameter than the
capable of being moved to different distances from the smaller one.
d, 4*d*. No Drawings.]

A.D. 1868, October 8.—Nº 3070.

I, Henry.—(*Provisional protection only.*)—" Improvements in watches, clocks, and other like
eces, time-keepers, or time indicators."
entor uses a hollow barrel arbor, through or into which the winding square passes. This hollow
ies a ratchet wheel provided with a click; above this the winding square carries a ratchet wheel
with a click. These ratchets are toothed in opposite or reverse directions. When the key is
the proper direction it winds the watch, clock, or like article without removing the key or the
refrom. The placing of the key on the upper ratchet keeps all the winding parts in due engage-
onnection. When the piece is sufficiently wound the winding parts are by this arrangement
f a portion of the pressure exerted thereon, so that there is less liability to overwinding. When
turned in a direction reverse of the winding direction it only acts on the upper ratchet, and the
quare is then, so to speak, disengaged from (or from action on) the barrel arbor. The arrangements
be applied to watches or the like wound at the bow, pendant, or stem.
d, 4*d*. No Drawings.]

A.D. 1868, October 8.—Nº 3071.

T, George.—(*Provisional protection only.*)—" Improvements in apparatus for applying adhesive
to paper and other materials, and for effecting adhesion between pieces of paper and other
ls."
gh slotted at bottom is used containing a loose lining of muslin or other reticulated, open meshed,
flexible fabric which forms a sort of channel or longitudinal bag and protrudes through the slot.
h, gum, or other adhesive agent is introduced into the trough and passes through the muslin or
ric and through the slot and thus attains the paper or other material fed under the trough in con-
ngths or otherwise.
r other material may also be fed over the trough and receive adhesive agent from a roller working
ugh.
strips or pieces of paper or other material are to be united they are fed one strip or piece over and
strip or piece under the trough, and both receive adhesive agent as described. They meet together
nited, the union being secured or effected by their passage under a scraper or pressure edge, which
bly a long narrow piece of caoutchouc or other elastic material held in a weighted frame (weighted
, so that it may be regulated as required). The combined lengths or pieces pass on to a doffing
revolution of which draws them towards itself and effects the feed over and under the trough.
s travelling endless webs or bands may be used to carry and feed the material to be treated. A
otted trough may be placed over the first so as to apply adhesive agent to (and attach) three layers
or strips. The apparatus is especially suited for uniting continuous lengths of paper combined with
otherwise for the collar manufacture.
d, 4*d*. No Drawings.]

A.D. 1868, October 8.—Nº 3072.

RON, Joseph.—" Improvements in boring or sinking pits or shafts for mines and other purposes,
apparatus and tools employed therefor."

This invention consists in the application of the system and apparatus for sinking wells describ Specification to Patent No. 1916 of 1867, to the sinking or boring of pits or shafts for mines, addition to the implements there mentioned, a boring tool for enlarging the boring is described chisels on an incline so as to make the enlarged boring taper down to the small boring, and a rec placed in the latter to receive the debris and is drawn out when full.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 8.—N° 3073.

BARCROFT, JAMES.—" Improvements in the manufacture of felted cloth and in machinery " therewith."

The novelty of which mainly consists in felting together the edges of two or more pieces after from the bat frames by their contiguous sides overlapping when passed through the felting machine make broad felted cloth for carpets or other purposes. Also in placing the ends of the bottom ro come nearly together so as not to come opposite each other, thereby making the cloth more even.

The machine is also used for felting one or more narrow pieces without joining their sides or edge

[Printed, 10*d.* Drawing.]

A.D. 1868, October 8.—N° 3074.

GRAY, JOHN MCFARLANE.—" Improved modes of and machinery and accessory apparatus for " war turrets and heavy ordnance."

1st. Guns and turrets are worked by steam power, and the person taking aim has a direct contr engine.

2nd. Machinery for working turrets and heavy ordnance by a steering engine. The steering described in Gray's Specification, No. 3321, date 18th December 1866. The controlling wheel turret, or it is outside the turret, or it is in a conning tower at a distance from the turret.

3. System of aiming in the conning tower by sights always parallel with the gun.

4. Approximate aiming by graduated index circles and correction for alteration in the direction ship by a tell tale compass card.

5. Machinery for working one piece of ordnance in a fixed tower by a crank arm on a central shaft trains the gun and carries it from port to port, and also gives a longitudinal motion available for out the gun carriage or for elevating the trunnions.

6. Construction of roller wheels for the gun carriage frame. The training wheels are not conical; are made up of discs to reduce the twisting action, and being parallel they run on flat races.

[Printed, 6*d.* No Drawings.]

A.D. 1868, October 8.—N° 3075.

HUGHES, EDWARD JOSEPH.—(*A communication from John Moss Fletcher.*)—(*Provisional protection* —" Improvements in recreative games played with balls and cues, and in the tables and apparatus con " therewith."

This invention consists,—

First. In the adaptation to any convenient form of table of bells or gongs, combined with hoop stalls, for playing with balls and cues the game thus played called " croquet-billiards."

Second. The table is mounted with pins or skittles in imitation of the American skittle alley.

Third. In constructing folding tables to be used for billiards, croquet billiards, skittles, or for an ord table.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 8.—N° 3076.

SAGAR, THOMAS, and RICHMOND, THOMAS.—" Improvements in looms for weaving."

Our invention consists, first, in an improved letting off motion, particularly applicable to the lettin motion patented by us on the 15th January 1868, No. 126.

Secondly, in applying a slotted catch and a lock motion to the ratchet wheel of the taking up m secured to us in the Patent above referred to.

Thirdly, in an improved letting off motion connected to the ordinary vibrator, and working a wh the warp beam.

Fourthly, in an improved self acting apparatus for stopping the loom in case of floats. And,

Fifthly, in applying a shield to the weft forks.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 8.—Nº 3077.

URN, FREDERICK.—(*Provisional protection only.*)—" A new or improved combined lead pencil
er."
ition of an india-rubber eraser at the top of the pencil for taking out pencilmarks.
, *4d.* No Drawings.]

A.D. 1868, October 8.—Nº 3078.

Γ, EMILE.—(*Provisional protection only.*)—" A new mode or method of controlling restive and
horses."
ing restive and vicious horses by the employment of electricity, for which purpose the bit is in
by wires passed along the reins with a battery or small and powerful magneto electric machine
the coachman or inside the saddle, as the case may be.
, *4d.* No Drawings.]

A.D. 1868, October 8.—Nº 3079.

N, JOHN HENRY.—(*A communication from Charles White Hubbard.*)—" Improvements in saw
and in securing the same to saw blades."
ention consists in making a saw blade with a slot in the rear end, which slot in form and size
s to the form and size of a bolt carried in the handle, one end of which bolt is provided with
ads, to which is fitted a screw nut placed in a recess made in the saw handle. The back end of
ade is fitted into a groove made in the front end of the handle. The part of the handle which is
the hand of the operator is formed of wood, and is secured to the metal part by means of screws
When applying the handle to the blade the bolt is turned so that its head will be in such a
to enter the slot in the saw blade, the back end of which blade is placed in a groove in the
of the handle. The bolt is then turned so that its head will be locked in the slot, and the nut is
any suitable means until it and the bolt has drawn the handle and saw blade firmly and securely
It is obvious that the improved saw handle may be made of metal or wood, or of metal and
bined.
, *8d.* Drawing.]

A.D. 1868, October 8.—Nº 3080.

WILLIAM.—(*Provisional protection only.*)—" Improvements in bricks or blocks to be used for
purposes."
ention relates to a peculiar form of moulded brick or block to be used for building purposes,
reater strength in the structure is obtained, and consists essentially in making such moulded
locks of a double dovetailed form, the thinner or narrowest part of the brick or block being in
By adopting this shape the bricks, when laid, forms a better and stronger band, as they are in
il jointed together.
, *4d.* No Drawings.]

A.D. 1868, October 8.—Nº 3081.

AMES.—" Improvements in apparatus for obtaining extracts from roasted malt."
vention relates to the obtaining of extracts from roasted malt in the manufacture of malt
and it consists principally in arranging apparatus to contain the roasted malt in such a way that
may pass from the mash tun through it on their way to the boiler; and in constructing the
apparatus so that the worts may pass through the roasted malt in an upward direction whilst the
ot stirred by revolving or other suitable agitators.
, *6d.* Drawing.]

A.D. 1868, October 8.—Nº 3082.

WILLIAM.—(*Provisional protection only.*)—" Improvements in looms for weaving."
ention consists of a positive taking up motion to be applied to looms for weaving for taking up
n a regular and uniform manner as it is woven, and thus preventing any slipping of the cloth on
and consequent irregularities in the weaving.
ntion consists principally of a fluted iron roller, round, and in contact with about three-quarters
umference of which the cloth is caused to pass.

A.D. 1868, October 8.—N° 3088.

ZYSEL, Francis.—(*Provisional protection only.*)—"Improvements in expanding or extending frames for "furniture and other articles."

My invention consists in the construction of a frame upon the principle of the apparatus known as "lazy tongs," which is mainly composed of a number of short pieces jointed together in such a manner that by compressing laterally the extremity of the apparatus the same is extended or expanded lengthwise. In applying my invention to a bedstead the expanding frame should be arranged with the series of jointed pieces to form the two ends of the bedstead, the said ends being united by bars or rods which support them and keep them parallel. The frame at one side or end is provided with guide-ways or slots at right angles or nearly so to the direction in which the said frame expands, and the end piece of each series of joints is provided with a stud or pin which works in the said guideway. Cords or bands should be also attached to the frame to support the mattress and other bedding.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 8.—N° 3089.

HEACOCK, Thomas.—"Improvements in door knobs or handles."

The knob spindle is screwed throughout its length and has a knob fixed at one end. The spindle is first inserted through a screw collar fixed on the door, over which fits a rose screwing thereon.

A knob is then screwed on the opposite end of the spindle, a squared part on said knob abutting against the door, space being left for sliding a slotted back plate on to the squared part of the knob, which plate is screwed to the door, the rotation of the spindle being obtained by providing a central collar or washer turning on a flange on the back plate. The whole is surmounted by a rose as before screwed or otherwise fixed in position.

[Printed, 1*s*. Drawings.]

A.D. 1868, October 8.—N° 3090.

MANFIELD, Moses Philip.—"Improvements applicable to the soles of boots, shoes, clogs, and other "coverings for the feet."

Pins or screws with leather heads are driven into the soles and protect them from wear until the leather heads are worn down.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 8.—N° 3091.

NEWTON, William Edward.—(*A communication from Charles Ole Olsen.*)—(*Provisional protection only.*)—"An improved binnacle for iron ships."

The compass case is surrounded by an outer case, and the space between the two cases is filled with glass or some other non-conducting substance.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 8.—N° 3092.

MACMILLAN, Alexander.—"Improvements in buttons or fastenings, and in the method of fixing "buttons or fastenings to garments and other articles."

According to this Provisional Specification a shank which is protruded through the fabric from the back is in a variety of ways connected with the button at the front.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 9.—N° 3093.

VARLEY, James, and VARLEY, Sam Warburton.—"Improved machinery for treating waste silk and "other fibres."

This invention relates to the treatment of waste silk and other fibres, commencing with apparatus for rubbing and teasing the same. The material to be operated upon is (after being softened or fermented) passed through rollers of varying diameters (the upper one being fluted and the lower one covered with india rubber or some retarding substance), when it becomes rubbed, and then it passes on to the teazer. It is now removed to an opening and straightening machine, which consists of a drum covered with card fileting and provided with porcupine feed rollers, also with doffing knife and drawing off rollers. In proximity to the upper surface of the drum are placed a number of heckles or fallers, the teeth of which are at an angle reverse to the card fillet teeth. These faller teeth operate upon the fibres as they pass, and are raised in succession to releive the fibres by means of double cams worked from the central shaft of the drum.

he spindle of shuttle box is passed, and a pin and screw for the picking strap and for securing the glass or ther tube in position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 9.—N° 3096.

ARVIS, William.—(*Provisional protection only.*)—"Improved label attachments for poison bottles and bottles containing dangerous substances."

The object to prevent the said bottles from being mistaken in the dark as well as in light for other bottles; n other words, to reduce the chances of accidental poisoning and damage.

A label attachment, that is a printed label which can be attached to any ordinary bottle, is used. The aid label attachment is made of cardboard, india rubber, metal, or other material. When in position ecured to a bottle it projects outwards and downwards or upwards; a convenient form resembles a shade on he chimney of a lamp, and renders it impossible that the bottle can be grasped and used without an appeal eing made to the sense of touch or to the senses of touch and sight.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 9.—N° 3097.

YER, Thomas Washbourne.—(*Provisional protection only.*)—"Improved apparatus for preventing and curing smoky chimnies."

In the drawing marked "C" gives the elevation of a fire place with the smoke preventer fixed above the nantle shelf within the chimney, which can be removed for cleansing and easily placed again in its position. t is a fan, coil, or worm working on a vertical spindle placed on a cross bar in the chimney.

The bearing portion of the coil, fan, or worm is intended to work on the spindle with a collar and point nade of hard metal to prevent friction.

The smoke ascending acts in the fan, coil, or worm, as represented in the drawing marked "C" as a croll, causes it to revolve, thereby preventing a down draft and smoke returning into the apartment.

The drawing marked "A" gives a plan of the fan, coil, or worm; is fixed in the chimney or chimney pot t the top of the chimney.

In the drawing marked "B" shews the same apparatus as above described in the drawing marked "C," ut fixed at the top of the chimney in a pot made of any metal, resting on a round ring attached to the rickwork, with cross bar secured in the said pot to suport the spindle carrying the fan, coil, or worm, vhich can be removed for the purpose of cleansing and easily placed back again.

In the drawings marked C and B is intended to be worked either together or separate.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 9.—N° 3098.

DEACON, Henry.—(*Letters Patent void for want of Final Specification.*)—"Improvements in the manufacture of sulphuric acid."

This invention consists in making sulphuric acid by causing chlorine to act upon sulphur or sulphurous cid in the presence of water or the vapour of water, and in re-producing the chlorine from the bye product f hydrochloric acid by any suitable means.

The sulphur or sulphurous acid I use is that contained in metallic sulphurets. The sulphurous acid is btained by any of the ordinary methods, or by burning the sulphuretted hydrogen obtained from any vailable source or from fresh alkali waste by acting upon it with carbonic acid.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 9.—N° 3099.

ANNART, Louis, AUBERTIN, Nicholas Alphonse, the younger, and CUNNINGHAM, Villiam John.—(*Provisional protection only.*)—"Improvements in the manufacture of door plates, name plates, stencil plates, and sign plates suitable for sign boards for the fronts and other parts of shops and other buildings, and for other similar purposes."

The novelty of this invention consists in taking a thin sheet of metal and cutting the letters entirely out y means of a saw or other similar cutting instrument, after which the plate so cut out is fixed to a plain iece of metal either painted or colored on one side, or a colored substance may be placed between the two lates, or the letters may be filled with colored wax, as commonly practised.

Another method is by cutting the letters through a thin piece of wood instead of metal, and fixing a plain iece of wood at the back thereof, and using this as a pattern to obtain a metal casting from, and then filling

a false bottom of sheet metal fixed between two narrow boats as a twin boat; a paddle whe
propeller or propellers is placed between the two boats, to which rotatory motion may be im
steam engine; by these means the propeller acting upon the water that passes over the top side
bottom instead of acting upon the body of the water in the canal thus prevents such a disturb
water as would prejudicially affect the banks of the watercourse.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 9.—N° 3101.

ARCHEREAU, Henri Adolphe.—" A new method of obtaining heat and light and its vario
" tions, and in apparatus connected therewith."

The invention consists in the production of heat and light by the aid of a mixture of inflamm
such as pure hydrogen, carbonated hydrogen, or oxide of carbon, and atmospheric air, or
combustion supplied under pressure in liquids, liquefiable, pulverized, or viscous matters.

The mixed gases are rendered available in the form of jets for fusing metals in apparatus arra
manner detailed at length in the Provisional Specification.

The heat produced by the jets may also be utilized in combination with the chemical and
action of the jets. In the case of iron, for example, the sulphur, silicium phosphates, and even
are eliminated. Oxides, acids, or salts may also be introduced with the gases to assist their actio

The jets may also be used for heating and decomposing all kinds of chemical salts an
substances. Sand and other pulverized matters may also be heated by means of jets introduc
I also apply the invention for the production of luminous and other effects below water, th
conveyed through a pipe to a receiver and impinging on a platinum or magnesium wire in the
the same; or the light may be enclosed in a transparent water chamber. Water may also be he
manner by making the double chamber of metal with the light disposed in the interior.

[Printed, 3*s.* 2*d.* Drawings.]

A.D. 1868, October 9.—N° 3102.

NEWTON, William Edward.—(*A communication from Charles M. O'Hara.*)—(*Provisional*
not allowed.)—" An improved system of ascertaining and checking the amount of money or num
" taken by the conductors or drivers of omnibuses or other public vehicles."

A presentation check to prevent embezzlement by the conductors or drivers of public conveya
check contains a certain sum of money or its equivalent which it will be the interests of pas
receive.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 9.—N° 3103.

CURTIS, William Joseph.—(*Provisional protection only.*)—" Improvements in sewing machin cylindrical or conical tube therein up which the water will flow and run out at the top and thus keep up a circulation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 9.—N° 3105.

MORGAN, James Clifford, MACAULAY, Henry, and WAIDE, Francis William.—"Improvements in the manufacture of cast-iron cisterns, lutes, and covers."

According to this Provisional Specification cast iron cisterns are made of various forms in order to obtain increased strength.

Lutes and covers for these cisterns are described.

Also moulds for casting these cisterns.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 9.—N° 3106.

READ, William Thomas.—"Improvements in treating bottles to prepare them to receive beer or other fermented liquor, and in apparatus employed in such treatment."

According to this Provisional Specification a liquid yielding sulphurous acid is forced in spray into bottles which are to be filled with beer, the bottles being inverted over a nozzle so that any excess escapes and runs back into the reservoir.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 9.—N° 3107.

WALKER, Benjamin, and PFLAUM, John Frederick Augustus.—"Improvements in machinery for reducing bulldog or other hard substances."

According to this Provisional Specification a strong conical metal pan open at the bottom has a conical pestle worked up and down within it.

The apparatus is employed to reduce bulldog and other substances.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 9.—N° 3108.

GRIFFITHS, John.—(*Provisional protection only.*)—"Improvements in the manufacture of piles of iron or steel, or of iron and steel for the manufacture of rails, angles, axles, tyres, shafts, and other articles."

According to this invention the pile is composed of four bars or plates, the top and bottom bars overhanging or embracing the side bars and holding them in their places. The junctions of the four bars described are made by scarf joints. The box or case made of the four bars is filled with bars or scraps of iron or steel. The outer bars of the pile may either be made wholly of steel or wholly of iron, or partly of iron and partly of steel. When the outer bars or some of them are made of steel a projecting rib is made at about the middle of each bar, which rib extends into the pile, but does not fill up the space in the middle of the pile. By this means a hollow is formed in the middle, and the pile is thereby more readily heated and the steel more effectually welded to the iron.

Or the pile is made of bars of a trough or channel form, the channels being filled with bars or scrap; or where girders are to be made, the ends of the bars of which the pile is made are furnished with projections from which the flanges of the girder are rolled.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 9.—N° 3109.

HALLAS, David, HALLAS, George, and WOODHOUSE, Samuel Joseph.—(*Provisional protection only.*)—"Improved apparatus for regulating the supply of gas to 'burners.'"

The purport of this invention is to regulate the supply of gas according to the varying requirements of each case. For this purpose the gas is passed through a cock which is made hollow (with one general ejection port) and pierced with holes of varying diameter, each hole being calculated to furnish a supply for a given number of lights. A marked index on the face of the cock instructs the attendant how far to turn the cock handle for any given number of lights it may register. In conjunction with such cock arrangement it is sometimes preferred to pass the gas into a perforated cylinder floating in liquid. This cylinder is encased in a chamber containing the liquid, and the holes or perforations in it are in rows and are graduated, the smallest being at the top and the largest at the bottom, as when the pressure of gas is the greatest the cylinder will be raised to the top of the chamber for the emission of an increased supply.

are placed, and when such sliding piece or pieces are withdrawn from or moved to one end of the said flexible ribs, grooves, or guides the edges of the material to which they are attached can be opened, loosened, or separated from one another.

The sliding pieces may be so formed as to clasp the said flexible ribs, grooves, or guides, and so remain at any part at which they may be placed, or they may be so formed as to be secured at any desired point by means of pins, springs, catches, "snaps," or other suitable contrivances. Where several of such sliding pieces are arranged upon one pair of the said flexible ribs, grooves, or guides the sliding pieces or some of them may be attached to one another by means of a chain or other flexible or elastic connection which may be secured at one end to the article, so that upon moving the first one of such sliding pieces so connected along the flexible ribs, grooves, or guides it will draw the other sliding pieces after it at suitable distances for holding the two edges of the article together, and by securing the first one of such sliding pieces so connected by a pin, catch, or other suitable means the whole of such sliding pieces will be retained in the desired positions. The "flexible metal" from which, according to one part of this invention, the said flexible ribs, grooves, or guides are formed is formed from metal wire interwoven or interlaced, and in order to render it more compact such gauze may be flattened or compressed so as to present a comparatively smooth and even surface and securely interlock the wires of which the gauze is composed with one another.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 10.—N° 3115.

ABEL, Frederick Augustus, and **BROWN**, Edwin Ormond.—" Improvements in the mode of and " apparatus for firing explosive compounds."

This invention consists in producing a violent explosion of gunpowder, gun cotton, and other explosive compounds (excepting nitro-glycerine and dynamite) when in an unconfined state or when enclosed only in weak receptacles by means of a concussion produced by the explosion of a charge of detonating powder. A fuze is employed for this purpose having attached thereto a case containing the requisite detonating composition. Or an electric fuze is used in which the priming consists of detonating powder.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 10.—N° 3116.

SAINT AUBIN, William Henry, and **BENTON**, Benjamin.—(*Provisional protection only.*)—" Improvements in cocks, taps, and apparatus for drawing off liquids or gases from pipes, casks, or other vessels, " and for filling casks and other vessels with liquids or gases."

This invention consists of two parts, the first part comprising a conical plug fitting into another, each having perforations which can be brought opposite one another; the second part refers to a tap which can be fitted to the inner conical plug by means of tongues.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 10.—N° 3117.

LAKE, William Robert.—(*A communication from William Henry Remington.*)—" An improved process " and means for electro-plating with nickel."

My invention consists, firstly, in suspending or supporting a mass of the particles of nickel within the solution so as to present an extended surface, and connecting them with the positive pole of the battery by means of platinum or other suitable conductor of electricity not materially affected by the electric current or the solution employed. The second part of my invention consists in lining the whole or a portion of the interior of the vat or vessel which contains the solution with carbon or other suitable conductor of electricity not materially affected by the electric current or solution, so that the particles of nickel instead of being suspended or supported as above described may be placed upon the lining at the bottom of the vat in such a manner as to present the desired surface, the lining of the vat being connected with the positive pole of the battery.

The third part of my invention consists in the employment of a plate of metal, carbon, or other conductor of electricity, upon which a coat of nickel of sufficient thickness shall have been deposited as a positive electrode, to be suspended in the ordinary manner and connected with the positive pole of the battery instead of suspending or supporting the particles of nickel, or placing them upon the bottom of the vat as above described.

The fourth part of my invention consists in a new and improved solution to be used in my process of electro-plating with nickel.

I take refined nickel and dissolve it in nitric acid slightly diluted with water, say about one-twentieth part of the latter, adding the liquid to the nickel by degrees until it is entirely dissolved. The nickel is then precipitated by the addition of a suitable quantity of carbonate of potash. The precipitate thus obtained is then thoroughly washed with pure water, after which it is dissolved in a strong solution of sal-ammoniac and filtered.

[Printed, 1*s*. Drawings.]

A.D. 1868, October 10.—N° 3118.

HART, Frederic William.—" A new (or improved) material or substance to be used for varnishing or " protecting the surfaces of lithographs, photo-lithographs, and other like printed surfaces."

The novelty in the above stated improvements consist in the application of a coating of albumen, the same rendered insoluble on the prints as a protecting varnish for lithographs, photo-lithographs, prints, placards, plans, maps, and like printed surfaces.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 12.—N° 3119.

SMITH, Napier.—" Improvements in treating and utilising waste acid liquors."

The acid used for " pickling " or cleaning iron is saturated with iron, and there is then added to it as much lime as will precipitate the iron, which is drained, washed, dried, and burned in a suitable furnace. For the lime may be substituted any alkaline earth, alkali, or carbonate thereof.

The solution of chloride of calcium drained from the precipitated iron is mixed with sulphate of ammonia, and sulphate of lime is precipitated whilst chloride of ammonium is obtained in solution.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 12.—N° 3120.

ABEL, Charles Denton.—(*A communication from Adolphe Aubert*).—" Improvements in screw propellers."

This invention consists in constructing a propeller composed of one or more helical or screw blades fixed upon a driving shaft and enclosed by a cylinder open at the ends, which cylinder is fixed to the outer circumference of the screw blade or blades, and is consequently made to revolve therewith.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 12.—N° 3121.

MOON, James, DONALDSON, Isaac Hunter, and HARRIS, Samuel James.—(*Provisional protection only.*)—" An improved mode of making and fastening together bedsteads."

A new and simple method of fixing bedsteads by means of dovetail joints in metal or slots in metal placed either at the sides and ends of bedsteads or between the ends of bedsteads, so that the latter can be completely fixed or taken apart in one minute.

The advantages are extreme simplicity of structure, portability, economy in price, and freedom from dirt or insects.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 12.—N° 3122.

MOODIE, William.—" Improvements in the propelling and steering of ships or vessels, and in the " machinery or apparatus employed therefor."

My said invention consists mainly in new or improved arrangements of mechanism for the propelling or the propelling, steering, and manœuvring and siding, or the steering only, of ships or other floating vessels or structures. And one modification of my said invention consists of a main revolving shaft carrying a thin and by preference nearly flat rectangular propeller vane, float, or blade on each side of and exactly opposite and equidistant from the shaft, each revolving on an axis near its centre parallel to and in a plane through the main axis, and having their journals working in bearings secured in duplex arms, discs, or frames, keyed or otherwise secured to the main shaft close to the extreme ends of the vanes, which revolve freely on their own axis between and with their edges just clear of their carrying arms and main actuating shaft; two or more floats might, however, in some cases be set in each arm's radius, and three or more might be ranged at equal distances round the circumference. When the main shaft is placed vertically at the stern in the plane of the stern keel, having the frame or discs with the propelling vanes all revolving as a horizontal paddle wheel, close down to the keel through a well or watertight chamber, within a recess formed at the stern end of the keel close to the stern post, to which the rudder may, as is usual, be attached when it is used, though it is not required with this improved propelling and steering mechanism; it is turned by its main driving shaft by a simple revolving motive power transmitting mechanism in any one direction, no reversing of which being required; then in this case the vessel is propelled right "ahead" or "astern" by causing each propelling vane to make half a revolution on its own axis in the opposite direction to that of and for every revolution of it on and with the main shaft, thus making a positive alf turn in the same direction as the main shaft, so as always to present the alternate surfaces of the ade towards the direction of resistance and at right angles to the line of propulsion on the one side the propeller wheel, and be parallel to it on the other, maintaining the opposite vanes at right angles each other in all positions of the circle. This is effected by one simple arrangement, by two hollow internal shafts upon or within the main shaft, which may be solid or hollow respectively, each having ixed or holding chain wheel on the end coupled to a notched chain wheel exactly double the size, fixed on upper end of the spindle or axle of each vane by an endless pitch chain (but instead of chains toothed eels may be employed with intermediate connecting ones, or other equivalent mechanism), and the two fts having shifting and coupling discs at the top or other end, so that by turning and fixing these the es can be set and fixed at right angles, or to any other angle to or in a line with each other on deck; ile by a lever, screw, or other hand shifting and holding gearing attached to either of the discs, both discs d hollow shafts, chain wheels, and chains can be turned and held (when so set and fixed with the vanes at ht angles), so that the vessel may be propelled "ahead" or "astern" by making the "starboard" or ort" vane (respectively, according to the direction the main shaft and whole wheel is turned or driven) be at right angles to the line of the ship (so as to force and displace the water in the same direction as own motion and the opposite direction to the course of the ship) when the other or float on the "port" e is feathered parallel with the keel, and to present no resistance to the water or "way" of the ship on side turning in the opposite direction the ship is being propelled for the time being, and both on opposite es of the vessel, with the plane of their axes "athwart ship," and which only requires a half turn of both afts together, while a quarter turn of these in one direction or the other would make the propeller steer d propel the ship round on a centre to "starboard" or "port" respectively, and by a gradual change m the one position to the other a gradual increasing or decreasing scroll curve or course can be given to vessel in like manner; and by a slow motion of both shafts round towards the "backing" position erred to and on or back towards the forwarding position, the speed of the ship can be brought down to y degree, or stopped entirely, and moved round and on again to any speed back or "ahead" due to the gine or prime mover, which goes on without reversing or materially altering its speed in "racing" or lowing;" the power exerted by the engine in displacement being generally and nearly the same, it being ly the direction on the line of displacement of the water which is altered in relation to the line or position the vessel or her course. And when this propelling and steering gear is used for steering alone the two es or segmental catch levers on the two spindles are set either a quarter turn round and fixed so that the pelling blades are parallel to each other, and on the motor and main shaft being stopped in their tion and set and fixed with the plane through the axes of the blades in the plane of the stern keel d dead wood, then the two balanced floats can be actuated by the reversing lever or other gearing as iller, rudder, or steering gear and helm, all with great ease, affording a simple means of bringing all the ats from the position of propelling by power in a line with or parallel to the path of the vessel to a position esenting little or no resistance in the water when sailing. Two or more of these complete propelling and eering wheels may be employed in one vessel, as, say, by placing another in the centre line at the bow keel, hich would much facilitate and enable vessels to be "canted" and "sided" in little space and time in arbours, and thus also be most suitable for "driving broadside on" and otherwise manœuvring floating ocks and other structures or war ships. And one such wheel might be placed under each "starboard" or port" quarter or bow, or both, or under or at the sides or other convenient part of such floating vessels r structures. The feathering paddles, though described as nearly flat and rectangular, might be made orrugated with ridges and hollows radially, or have feathers formed on them in the same direction, and so resent little or no resistance edgewise to the water; and they might be of an elliptical, round, or other ape in their superficial acting surface.

[Printed, 1*s.* 4*d.* Drawing.]

A.D. 1868, October 12.—N° 3123.

ORDAN, Thomas Brown.—(*Provisional protection only.*)—"Improvements in machinery and apparatus for breaking, separating, and dressing mineral substances."

This relates, first, to breaking machines; and, second, to separating and dressing machines.

The breaking machine consists of a box containing a ram and two wedge shaped cheeks having faces rved in horizontal section and kept in adjustment by massive wedges to which they are bolted. The ram worked up and down between the wedge cheeks by an eccentric shaft, the eccentric part of which fits into e centre hole of the ram while its gudgeons concentric with the driving pulley work in bearings on each de of the box; complicated levers and joints are thus obviated. The faces of the ram crush the material d are not weakened by corrugations, but are curved to correspond with the side pieces. The radius of is curvature shortens towards the outlet to prevent thin flakes of stone passing.

ports.

The ports vary in number according to the materials contained in the stuff; it is sufficie
three. The 1st and largest is always that delivering the lightest material. It occupies entir
the machine, and its level below high water mark is adjustable. The stuff flows with the wate
sieve slightly inclined and forming the top of another tank. A little in front of the dash of
the sieve a bar or stop is placed which detains the particles nearest the sieve long enough to b
and if fine enough to be driven through the sieve into the slime hutch, while the light parti
too large to pass through the sieve are forced over the bar and delivered into the tram wagon,
for carrying the stuff away. The object of the inclined sieve is to save the "slimes" or
remains in the water; these after falling through the sieve are further washed by the current of
down under the bottom of a vertical partition across the tank, and afterwards rising throug
help in carrying off the waste and receive a downward motion which their gravity contin
lighter waste remains suspended in the water.

The 2nd port delivers particles of a medium specific gravity. It is situated at one side of
towards the delivery end, and the stuff arrives at it under a perforated partition adjusted to su
to stop all the waste.

The 3rd port delivers the rich ore, and the way is through a partition similar to that of the
at a lower level.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 12.—N° 3124.

LEONI, Sigismund.—" Improvements in heating and cooking apparatus."

The apparatus is intended for cooking and heating by gas, and consists of a portable or fixed
hollow metal ring with jets for gas and an arrangement for the supply of air and gas together a
fire clay at the top.

Another gas ring with its appurtenances supported on legs is placed at the lower part of t
and a moveable carriage supporting a cylindrical case of fire clay is moved into the first named
case being open at top and bottom, and forming a screen and reflector for the heat.

The joints or articles of food are suspended inside the said screen.

For heating stoves the moveable carriage with the heat reflector carries the fire clay cover
enclosed in an ornamental case of china or porcelain with suitable perforations in it.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 12.—N° 3125.

FIELD, Abraham, and TUER, Andrew White.—" Improvements in the manufacture of
" tablets, or cases containing representations, announcements, illustrations, or devices for adv
" other purposes."

According to this invention show boards or tablets are made with projecting parts, ribs, or feat
or of a rectangular or curvilinear form of plain wood, tin, cardboard, or other suitable material,
letters, marks, or devices are printed by means of lithographic stones, wood blocks, type, or

ed are arranged in such a way that the parts proposed to be affixed on one set of sides are
alternate spaces of equal dimensions with the parts proposed to be affixed on the opposite sides.
l sheet is then cut into slips; on the first slip are the parts of letters required to be fixed on
and right side respectively of the first rib on the left hand of the observer looking at the board
On the second printed slip will be the parts required to be affixed on the left and right sides
of the second rib from the left hand, and so on, an appropriate slip being printed for each rib in

arks or devices for both sides of a feather rib or projection and the corresponding front part of
ıay be printed in continuous series. The slips are secured to the ribs or feathers by some suitable
bstance, such as paste or glue.
rial impressed or imprinted with the letters, words, or devices intended to be made visible to the
o is in front of the board or tablet when printed separately may be secured in position upon
ther in one piece before the feathers, ribs, or projections are fixed, or may be cut into slips and
lhere on the face of the board or tablet in the spaces between the feathers, ribs, or projections.
ls. 6d. Drawings.]

A.D. 1868, October 12.—N° 3126.

)RD, William, and GADSBY, Joseph.—"Improvements in the manufacture of lace made
ı net or twist lace machines, and in the machinery or apparatus employed therein."
ıtion consists in manufacturing on single tier machines employed in the manufacture of bobbin
lace an embroidered traversed warp net, the pillars of which are each made with one bobbin
ne warp thread, while the crossings are made with two warp threads, the warp threads traversing
f the breadth, being made, if desired, to traverse the whole width of the machine. When the
s arrive at the extremities of the breadths, the left hand back warp thread is placed in the front
ıt hand front warp thread is placed in the back when making right twist net, but when we make
t net the left hand front warp thread is placed in the back, and the right hand back warp thread
the front. Thus we produce a perfect net with all the crossings bound down in like manner to
ade Brussels lace.
hinery or apparatus we employ to carry out our invention consists, firstly, of two open stump
r equivalents having a stump for each gate. Secondly, we employ two other bars, one to push
out of the front stump bar into the back stump bar, the other bar to push the threads out of
ımp bar into the front stump bar. We also employ two other bars or instruments, one to bring
d back warp threads into the front, the other instrument to take the right hand front warp
› the back when making the right twist, or vice versa when making the reverse twist; the
ımber of warp threads being wound on each bobbin or spole; the bobbins or spoles are then
ı endless band, chain, or circular disc made to revolve at the required rate of speed to produce

ıse to make other meshes of fabric than the above described with the machinery or apparatus
ioned.
8d. Drawing.]

A.D. 1868, October 13.—N° 3127.

ıseph. — (*Provisional protection only*.) — "Improvements in apparatus for communication
he passengers, guards, and drivers of railway trains."
of taking up the slack in cords or chains used in communicating between passengers, guards,
on railway trains.
ld. No Drawings.]

A.D. 1868, October 13.—N° 3128.

Thomas Frederick.—" Improvements in the mode of securing the joints of rails, and in
ı for guiding and providing for the safety of engines and trains passing over points or switches
rs."
features of novelty which constitute this invention are,—
ıution of "switch-boxes," the peculiar combination of lever crank and accessories for effecting
ı on switches and the tumbler, with slotted arrangement of shunting lever. The slot and pin
t of the locking levers with the openings in the standards to admit of interlocking, and the
ressure pin to regulate the throw.

LYTTLE, WILLIAM ALEXANDER.—(*Provisional protection only.*)—" Improvements in el
" conductors and the batteries connected therewith."

Firstly. The employment of an auxiliary zinc or other electro-positive element which sha
the conducting wire in such a way that it shall form with that wire a single voltaic pair.

Secondly. The employment of a fine wire or other resistance connexion between the pol
with the view of allowing a feeble current to pass when the battery is not in use, and so to
and irregular internal action.

Thirdly. The employment of a compound diaphragm made of clay and oxide of zinc
against diffusion of the liquid elements.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 13.—N° 3130.

CLIFTON, HENRY CHARLES.—" A new or improved system of and machinery for ma
" for picture frames and other purposes."

This invention consists, firstly, in passing a board in which " composition " is spread un
revolving roller carried by a framing so as to cause the engraved ornaments to be imp
composition ; and, secondly, in passing the board with such ornamented composition t
machine in which the board is held and drawn forward by rollers, while knives are ma
ornamented part of the composition from the other part, and also to cut the ornamented p
width required.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, October 13.—N° 3131.

LE MAT, FRANÇOIS ALEXANDRE. — " Improvements in the construction of revolving
" fire-arms."

This refers to those revolvers in which in addition to the ordinary barrel and revolving b
there is a central charge chamber with separate barrel intended for firing grape or duck shot.
consists of a combination of parts, the main features of which are the following :—The ex
the central cartridge and the cartridges in the revolving chambers is effected by a pin ; the c
and the revolving chambers are loaded at the breech ; the breech and movable block serving
and a cartridge extractor ; and the hammer is jointed so as to be made to act as require
central cartridge or on the cartridge in one of the revolving chambers.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, October 13.—N° 3132.

SANDERS, GEORGE NICHOLAS.—(*Provisional protection only.*)—" Improvements in and c
" lamps."

a space between the globe and the cap. In lamps supplied with gas from above the supply is turned on and off by a piston free to slide in a tube.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 13.—N° 3133.

SUGG, William Thomas.—" Improvements in apparatus for regulating the supply of gas, and in fittings " connected therewith, which are also applicable to other purposes."

This invention relates, in the first place, to further improvements in apparatus for regulating the supply of gas, for which Letters Patent, N° 2277, were granted to me, September 5th, 1866, and consists in the method of securing the flexible diaphragm to the case of the governor. This is effected by inserting a ring with inclined planes on its periphery, and which on being turned partially round comes in contact with studs, and is thus forced downwards upon a shoulder formed in the bottom of the case, so that the flexible diaphragm which is placed between the ring and the shoulder is firmly retained in position.

The invention, in the second place, refers to the construction of " cones " or fittings adapted to receive burners. These are made internally of a taper form, and within the tube a conical plug is inserted of such diameter as to leave a narrow concentric passage for the gas.

To facilitate the manufacture, the rings and cones are preferred to be cast in soft metal, in polished metal moulds; this however is not indispensable.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 13.—N° 3134.

DAWSON, Ralph.—" Improvements in the construction of gunboats for coast and harbour defence."

The novelty of this invention consists in constructing gunboats of two separate floating bodies of the same size and shape, and in connecting them together at a suitable distance asunder, and in forming a cupola of the entire width of the two aforesaid parts at the midship section thereof; and in fitting the guns, steering wheel, capstan, and propeller all within the cupola, so that the whole working and fighting of the gunboat can be effected within the cupola and the whole view of the horizon be commanded.

Another feature of novelty consists in arranging pipes all round the cupola connected with the boilers for filling the cupola with scalding steam in the event of an enemy getting possession of the cupola.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 13.—N° 3135.

SPICE, Robert.—(*Provisional protection only.*)—" Improvements in the construction of jars intended to " contain manufactured tobacco."

The novelty of this invention consists in adapting a perforated bottom to jars. The bottom edge of the jar fitting into a loose bottom or stand containing a pad capable of absorbing and holding water, the object and intention of this invention being to keep the tobacco from getting too dry.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 13.—N° 3136.

WORSTER, James.—" Improvements in means or apparatus for holding or supporting stereotype plates " whilst taking impressions therefrom."

For this purpose the blocks on which the stereotype plates are supported whilst impressions are being taken therefrom are formed in parts (four preferred), each part being of the form of a triangle or approaching thereto, and being provided with flanges, projections, or " catches," rising above the surface of the supporting block or blocks; such flanges, projections, or " catches " being suitably undercut or inclined on their inner sides so as to hold the stereotype plate, as is well understood. And the triangular parts or blocks are formed in various sizes, so as to facilitate the making up of a block to the size of the stereotype plate to be supported.

By these means a stereotype plate has support given to it over its entire surface, and much time is saved in in making up a " form," whilst the liability for the plate to spring or buckle as has heretofore bee sometimes the case is avoided.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 13.—N° 3137.

YATES, William.—" Improvements in the furnaces and tools to be used in metallurgic operations."

The furnaces are made or lined with bars of malleable cast iron or steel.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 13.—N° 3138.

LAKE, William Robert.—(*A communication from William Patton.*)—" An improved mode of an
" for dyeing hair."

The said invention relates to a method of dyeing hair by means of a paste, which is applied by co
the teeth of combs or other apparatus. The said paste is composed of nitrate of silver and gum a
gallic acid and gum arabic dissolved in water. These substances may be applied to separate combs
of teeth, or applied in successive layers to the teeth of one comb. For dyeing the eyebrows and m
I apply the paste to a cylindrical pointed piece projecting from a suitable handle.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 14.—N° 3139.

ROWBOTHAM, Richard, and EZARD, Charles.—(*Provisional protection only.*)—" An imp
" bar for fire-places."

" Instead of making the claws of top bars fixed as hitherto, we make them loose on one side so t
may be moved nearer to or further from the others, and thus be adjusted to the different sizes of
The loose claws may then be fixed in their position by means of a screw.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 14.—N° 3140.

SHANKS, John.—" Improvements in waterclosets, and in taps for the same, and applicable other

One improvement consists in forming a channel round the rim of and in the same piece with the
ware or enamelled iron basin of the closet. The flushing water is made to pass through this hol
and thereby has a whirling motion imparted to it, whilst enough water will run out of it after th
closed to fill the pan and seal the outlet. This simple contrivance renders any complicated " reg
quite unnecessary.

The water tap of the closet is made so as to dispense with packing. A plunger filling and workin
open barrel closes down against a raised annular valve seat, being provided with a face of lead
metal to meet the seat. Immediately above the seat there is a branch pipe communicating as dir
possible with the hollow basin rim, and the area of this discharge outlet is larger than that of the p
so that the water retains little or no surplus pressure tending to make it work past the plunger.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 14.—N° 3141.

CLOZEL, Louis.—" Improvements in tanning all animal skins."

The features of novelty in this invention consist in the employment of caustic soda, or potash, or
phuret of sodium, in place of lime for the removal of the hair; or sulphuret of potassium may be
in solution.

After the skins have remained four or five days in these solutions they are in a condition for a remo
the hair, they having been previously steeped in a bath containing a little sulphuric acid, nitric aci
acetic acid.

The hair being removed they are plunged into baths containing animal or vegetable substances ca
of rapid and specially putrid fermentation, such as urine, either pure or mixed with water, meat, bloo
the water used in hemp retting; the putrefaction being thus communicated to the skins they be
softened, and the fatty matters saponifying by the action of the ammoniacal salts, they are more
cleansed and consequently the labour is considerably reduced.

The skins being sufficiently softened are placed in a bran bath or other amylaceous liquid for dr
them, or instead thereof a solution of acetic acid and water may be used.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 14.—N° 3142.

LAKE, William Robert. — (*A communication from Charles Francis Ritchel.*) — (*Provisional pro
only.*)—" An improved apparatus for drilling series of small holes, and for other like operations."

The nature of my invention consists in combining a series of obtuse angled or inclined cranks in a
space in such a manner as to operate all of them simultaneously. The said inclined cranks are sup
at one or both ends to turn freely in a fixed plate, and are provided with drilling or other tools. The
end or the middle of each crank is supported in a plate which is carried on the end of crank arms,

dii equals that of the inclined cranks. Motion is communicated to the said arms, and the drills or other ols are thereby operated simultaneously.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 14.—N° 3143.

RTER, James Harrison.—(*Provisional protection only.*)—“ An improved lubricating apparatus.”

My invention relates to an apparatus for supplying oil or other lubricating material to the bearings or rnals of steam engines and other machinery; and the nature of the said invention consists chiefly in nstructing and arranging the said apparatus in such a manner that the oil or other liquid is by the action pneumatic pressure kept at a uniform level in a cup or trough connected with a reservoir, whence it is pplied to the part to be lubricated by capillary attraction or otherwise.

I construct the vessel or reservoir for containing the oil or other lubricating matter of any suitable shape, e, and material. The said vessel is closed and made air tight, except at the lower part, where it is ovided with one or more external cups or troughs which communicate with the interior of the vessel or ervoir by means of small apertures at or near the bottom of the same. The oil or other liquid with ich the vessel is filled will flow from the reservoir into the cup or trough at the side till the liquid the latter is level with the top of the aperture, but cannot rise higher in the said cup, as the pneu- tic pressure upon its surface then prevents any further escape of the liquid from the vessel till the uid in the cup again falls below the top of the aperture.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 14.—N° 3144.

KE, William Robert.—(*A communication from John Goulding.*)—“ Improvements in machinery for pinning wool and other fibrous materials.”

This invention relates to a machine in which the roving is fed at intervals to the twisting mechanism. e latter consists mainly of a revolving tube whose speed is governed according to the amount of twist ired. The yarn or thread after having been twisted is taken up by spools placed on spindles, which are pported by rails; the said rails receive an automatic motion by the action of a conical cam mounted on a gitudinally sliding shaft in such manner that cops of the required form are produced with ease and idity. The twisting tube is provided with a staple for giving the twist to the roving which is fed to it h an intermittent motion produced by a segment, which operates in combination with the conical cam an elastic roller. The segment is made in two parts, so that when employed in combination with the d motion it can be changed to regulate the roving. The cam is also made in two parts so that its bearing face can be increased or diminished for the same purpose. A brake-lever and disc are used in com- ation with the elastic roller and cam to stop the feed motion. The conical cam is mounted on the sliding ft in combination with a tappet arm lever, sliding wedge, and chain-wheel for supporting the spindle rails. roving is delivered at suitable intervals by means of a drum and rollers in combination with spools ported in bearings which allow them always to bear upon the drum.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 14.—N° 3145.

NES, James Grafton.—“ Improvements in apparatus employed in getting coal, stone, and inerals.”

ccording to this Provisional Specification holes are formed in coal, stone, and minerals by means of a ping bar having at its extremity a small chisel like cutting edge, and at some distance up the stem, ch is tubular, and on opposite sides of it, two wings having cutting edges. An hydraulic press like aratus with plungers on both sides of it is placed into the holes, and the coal, stone, or mineral is forced nder.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, October 14.—N° 3146.

BERTSON, James.—“ New or improved modes of obtaining and transmitting motive power, and in the means, apparatus, or mechanism employed therefor; part of such apparatus or mechanism being also applicable to the measuring of fluids.”

This invention under the first head consists mainly in a mode of generating steam, vapour, or the uating fluid currents of motive power engines, from water in a state of motion, and the direct contact of ted air or gases, or the heated products of combustion (in contradistinction to and not by heating ough metal plates, or in a closed vessel or boiler as heretofore done), thereby increasing the volume of the

currents, with or by the use of "louver board" or angled guiding pieces for the currents, i
in the cases, as well as other suitable modifications of these which would be generally suital
of utilizing the force of steam or vapour, as motive power engines, and by suitable s
inducing injectors and valve gear be enabled to use and apply this return current mode
force of steam to reciprocating piston engines. Another improvement, under this second
having the vane wheels and turbines enclosed in cases, with annular ejectors for inducing ai
steam or heated gases from the generating furnace; these motors are also actuated without
By another improvement, under this head, these continuous current motors are also actuate
by exhausting by annular steam ejectors and combinations, and motion communicated by
atmospheric air flowing in through the motor and be discharged by the inducing steam or ai
by another improvement, under this head, instead of using steam from a boiler as the im
actuating vane wheels or turbines by connecting pipes to the boiler under the water line,
the same to the case of the turbine, the water is induced back into the boiler by a steam cur
after the water has passed through the impelled motor, and thereby causes an endless re
stream giving motion to the wheel or turbine. By another improved arrangement, under t
injectors are used to give motion to a ram or piston, by the water forced by them. By anoth
an endless return current of heated air with injecting "louver board" or angled nozzles
through a furnace for expansion, and direct it in a similar way to actuate turbine or vane w
improvement, under this second head, consists in employing injected currents of cold wat
pressure, so as to cause them to enter by a valve into a condensing vessel and pass down
way through an induction valve, condensing and inducing out by its flow the condensed wate
an air pump, and for condensers for marine engines intercept the condensed fresh water and
from the salt condensing water, thus retaining the fresh water for the boilers.

Under the third head, this invention relates to an arrangement of induction and eductio
for a form of piston reciprocating engine in which the piston is made long, and by a twistin
municated to the piston by a crank pin arm fixed in the piston rod and reciprocating bush in
the piston is made to act as a slide valve for the steam and exhaust passages, these improve
being susceptible of various modifications suitable for water engines and meters. Anothe
under this third head consists in regulating or governing the speed of engines by causing the c
or vapour in the pipe to pass through "louver board" shaped or slanting openings in a disc o
formed wheel or pendulum piece or valve to keep a weighted or loaded arm in its position, so
of motion in the fluid would cause it to narrow the passage of the steam or fluid, and correspo
an increase of speed, and thereby regulate or govern the engine. And a last improvement u
head of this invention consists in the transmission of motion at high speeds from motive po
employing wheels on the first revolving shaft or crank shaft having a groove cut and leather
placed in it and made by its driving action to keep itself tight on its seat and transmit the mo
surface wheel made to gear with it and without noise by "stiff" rolling friction.

A.D. 1868, October 14.—N° 3148.

JAMES.—(*Provisional protection only.*)—" Improvements in the manufacture of ornamental and etallic tubes."

ention refers principally to tubes commonly called cased tubes, and one part of the said invention making the iron foundation tube with perforations of an ornamental pattern, and drawing or brass or casing tube upon it. By the drawing or rolling process those parts of the casing tube erforations in the foundation tube are depressed into the said perforations, the other parts their cylindrical figure. An ornamental metallic tube is thus produced. Instead of using a g tube, a casing tube ornamented with a running pattern may be employed. When an ornasing tube is used the pattern is destroyed by the drawing or rolling process at those parts where rted by the foundation tube, and is left over the perforations in the foundation tube.

part consists in making ornamental tubes by putting upon a plain foundation tube a pattern of , or lace, or other fabric or material, and over this pattern the casing tube. By drawing or e casing tube is ornamented by the pattern placed between it and the foundation tube. The tube may be perforated and made of zinc, and after the casing tube has been ornamented the may be melted out.

part consists in making plain cased tubes by making a foundation tube from sheet iron, from hers or other small articles have been punched or cut, and drawing a casing tube, either plain or d, upon the perforated foundation tube, the casing tube only being fixed on but not pressed into ations of the foundation tube.

, 4*d*. No Drawings.]

A.D. 1868, October 14.—N° 3149.

G, WILLIAM.—" An improved process of treating cotton seed and utilizing the refuse resulting m."

elty of this invention consists in treating cotton seed with sulphuric acid of a strength and in s varying according to circumstances with agitation, by which the cotton is dissolved or assimilated. action is complete I add a small quantity of water to separate the glutinous matter from the lastly remove the acid by an alkaline bath, and rapidly dry the seed by any suitable means.

, 4*d*. No Drawings.]

A.D. 1868, October 14.—N° 3150.

, HERON.—" Improvements in facilitating the stopping of railway trains and other rolling stock, he machinery or apparatus employed therein."

e engine or other part of a train, between the ordinary buffers is fixed a buffer protruding beyond desired extent and capable of being drawn inward. On each carriage is a horizontal rod running ength and protruding beyond the buffer beam. It is in a line with the first named buffer, and s or buffer heads; and it can be pushed by springs in either direction. This rod may be connected by gearing, and is so arranged by a spring that when a certain pressure acts on the breaks it will taining but not increasing the pressure. The discs or buffer heads on the rods may protrude e buffer beams as much as the ordinary buffers when compressed. The supplementary buffer is ut till it touches the disc or buffer head on the rod of the next carriage, when the breaks are the engine, and the ordinary buffers will become compressed, and the rod of the first carriage ssed back, thus applying the breaks to that carriage. The rod farthest from the engine being tward will press back the disc or buffer head on the rod of the carriage next it and apply the When the train is to be backed the supplementary buffer will be drawn inward and the discs or ds will not be affected by compressing the buffers, but when the supplementary buffer is pressed push back the whole line of rods. The gearing is arranged that the breaks cannot be pressed certain point. Equivalents may be substituted for the rods and springs.

, 1*s*. 6*d*. Drawings.]

A.D. 1868, October 14.—N° 3151.

VILLIAM ROBERT.—(*A communication from David Lowe.*)—" Improvements in apparatus for ing and burning the vapour of hydrocarbon liquids."

ing into practice the first part of my invention I construct a vessel for containing the naptha or id, which vessel is connected with the stove burner by a pipe which is bent and extends over the burner. The vapour is generated from the liquid in this part of the pipe and ascends there-

A.D. 1868, October 15.—N° 3155.

VILLE, HENRI ADRIEN.—(*A communication from Thomas Taylor, Edmund Pendleton Rogers, s Coryell.*)—"A new and useful improvement in elastic moulds."

avention relates to the use and application of a mould made of india-rubber or any other such-like aterial or composition as to suit it, especially to undercut works.

d, 4*d*. No Drawings.]

A.D. 1868, October 15.—N° 3156.

DWARD, and **LEE, JOHN.**—(*Provisional protection only.*)—"Improvements in the construction rangement of the furnaces of steam boilers."

vention consists in constructing the bridge or bridges of such furnaces of a semi-circular form and them towards the rear of the boiler, forming a passage for the heated gases between the arch of ge and the flue. Fire slabs, fire bricks, or iron is used in the construction of the bridge.

d, 4*d*. No Drawings.]

A.D. 1868, October 15.—N° 3157.

, GREGORY CULLING, and **DERMER, THOMAS.**—(*Provisional protection only.*)—"An improved of and apparatus for fastening scarves and other similar articles."

le or fastener consisting of a metallic plate is formed with a slot through the same, one edge of such bent or curved to facilitate the entrance and passage of the band or tongue of the scarf or other d one edge of the buckle or fastener being provided with curved points or teeth. The buckle or attached to the body or foundation of the scarf or other article, and the band or tongue passed he slot, the same being held in position by the points or teeth.

d, 4*d*. No Drawings.]

A.D. 1868, October 15.—N° 3158.

, ALFRED.—(*A communication from John Edward Hughes and Isaac Sherman Church.*)—"Improve- n the manufacture of water and drain pipes."

ention relates to the making of water and drain pipes of oakum, cordage, or other woven or net fibrous material, and cementing the same compactly with asphalt, rosin, pitch, or other similar

d, 4*d*. No Drawings.]

A.D. 1868, October 15.—N° 3159.

, EDWARD.—"Improvements in spring mattresses applicable to bedsteads and other articles of re."

iefly relates to the mattress known as the "oriental." Both sides of the frame are sloped down two ends so as to be only 2 or 3 inches high in the middle, and the outside spiral springs are by a lath running from head to foot, and free to work backwards and forwards. Sometimes the e supported by cross laths carried on the top of each row of springs. For a wide bed two distinct s are made, the division being from head to foot, and these two mattresses are connected together vided with means of attachment.

ming a mattress together when the frame is of iron the ordinary bottom rectangular frame is with, and the springs are supported on cross bars, the ends of which are turned up and fastened to gular frame. The frame may be hinged or not. In some cases the rectangular frame is altogether y with, and the ends of the cross bars are attached to the ordinary sides of the bedstead. s are also made in several parts, the divisions being across the bedstead, and either equal in number vs of springs or fewer, as found convenient.

d, 8*d*. Drawing.]

A.D. 1868, October 15.—N° 3160.

THOMAS.—"Improvements in safety lamps."

oles" which support the different parts of the lamp are hollow to supply air to the flame. The s of the poles are let into a chamber in which the air circulates, and in which there is a gauze ring through which the air passes to the flame.

d, 8*d*. Drawing.]

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 15.—N° 3162.

WOOD, Richard Mason.—“ Improvements in the manufacture of type cases, work b
“ and other articles in which compartments are used.”

The partitions forming the compartments are made all in one piece without joint or sea
fret saw or other means cubical or otherwise shaped portions out of a block or slab of woo
the recesses or openings for the required compartments, and leaving parts of the wo
boundaries, or partitions of the compartments. To these a bottom piece or foundation
The form, outline, and position of the compartments can be traced beforehand on the
placed thereon.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 15.—N° 3163.

VACHEROT, Isidore Alexandre.—(*Provisional protection only.*)—“ Improvements in
“ of buildings, and in beams or girders employed therein.”

This invention relates to improved forms of girders consisting of double troughs, combi
longitudinal central web, or single troughs combined in all cases with a longitudinal c
troughs are of various sections, rectangular and semicircular being preferred. In const
these girders combined with wood are substituted for ordinary wooden joists, and whe
floor is required two distinct and independent sets of girders are employed; the one fo
flooring boards and the other for supporting the ceiling.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 15.—N° 3164.

LAKE, William Robert.—(*A communication from Thomas J. Cranmer and Willia*
“ Improvements in breech-loading volley-firing guns.”

The nature of my invention consists in the construction of a gun with a cylinder f
given number of chambers, from which the powder and balls are discharged, the said g
with loose ammunition and arranged in such a manner that it is loaded automaticall
and will discharge in volleys any number of single balls, slugs, or cases of shot. Th
constructed that all the charges of a volley may be discharged simultaneously by the expl
The machinery of the gun, which is encased in steel plate, is proof against small-arms and re
which enables the gunner to direct his fire with ease and precision. The said gun can
on any kind of carriage, and will discharge one hundred and twenty volleys per minut
certainty. A sash or frame, which carries the hammer and main-spring, is operated by m
shaft and toothed segment. The lock consists of a sliding bar formed with a dog, whi

position for firing. The several parts of the gun receive their required motion from cranks on a shaft at the rear of the same.

[Printed, 1*s.* Drawing.]

A.D. 1868, October 15.—N° 3165.

LAKE, William Robert.—(*A communication from Valentine Fogerty.*)—"Improvements in repeating "breech-loading fire-arms."

I combine with a sliding breech block a magazine tube opening into the breech frame in such manner that it may be charged or filled with cartridges through the top of such frame. The said magazine is provided with a feeding slide or bar, which is removed in charging the magazine tube, and is slid by and engages with the cartridges (so that it can feed them forward) after the magazine is charged. The feeding device is located at the side of the magazine and works through a slot in the same. The feeding slide or bar is constructed with teeth for engaging with the cartridges, and with teeth acted upon by a feed pawl connected with the reciprocating breech block. The sliding breech block carries a bolt having an arm at its outer end, to which arm the hammer is hung. By turning this arm or the hammer the bolt locks the breech against the barrel, the hammer preferably acting against a pin extending through the bolt to explode the cartridge. An elastic cushion is interposed between the butt plate and stock.

[Printed, 10*d.* Drawings.]

A.D. 1868, October 16.—N° 3166.

VICARS, Thomas, the elder, VICARS, Thomas, the younger, and SMITH, James.—"Improvements "in self-feeding smokeless furnaces."

Relates to that class in which a progressive motion is given to the fuel, and consists,—

First. In feeding the fuel on to and preferably into and amongst the mass, instead of from above, as patented by us on the 4th July 1867, No. 1955.

Second. In immersing the lower edges or under sides of fire bars in water contained in troughs. The level of the water is maintained by a float acting on a valve or by other means.

Third. In forming furnace bars with cavities or passages through which water is allowed to flow or circulate from the troughs, and,

Fourth. In forming or fitting reciprocating bars with projections or steps called pokers, to stir up the fire, and in allowing, by capillary attraction or otherwise, or causing, by any suitable means, water to flow or circulate through cavities or passages formed in them.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, October 16.—N° 3167.

PEARCE, Richard.—"Improvements in the separation of copper and other metals from silver and gold, "the same being applicable to other metallurgical operations."

This invention relates especially to the purification of silver which has been precipitated from its sulphate, nitrate, or chloride, by copper.

The impure silver is placed on a filter in a boiler. Water is added, together with a small quantity of sulphuric acid. Steam, with air mingled therewith, is then admitted by means of an injecting apparatus, violent ebullition ensues, and the copper becomes oxidised and is dissolved by the sulphuric acid. The solution of sulphate of copper is afterwards drawn off, the silver stirred so as to make it a little more granular, a fresh supply of slightly acidulated water added, and the mixture is then boiled. The solution having been drawn off, the silver is carefully washed, and when dry, has only to be melted in crucibles for fine silver, without further refining.

This invention is also applicable to the treatment of gold and other metals, and for the separation of copper, iron, and other heavy impurities from tin ore; and also in the manufacture of sulphate of copper, and in other analogous operations.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 16.—N° 3168.

MARCHANT, Robert Mudge.—"Improvements in the permanent way of railways."

A steel or wrought iron rail is attached to a longitudinal cast iron seat or bearer by screw bolts passed up through the seat and let into the rail. The top of the seat is grooved to receive the rail. The seat rests at the joints in a shoe. In some cases a split tube is inserted in the groove of the seat so as to project slightly above the groove, when a locomotive passes over the rail the tube gives and allows the rail to take its seat on the bearer.

[Printed, 8*d.* Drawings.]

piece. In closing the breech the sliding bar strikes the breech piece and is thereby returned to its first position. The cartridge is constructed with a metal head or base which is firmly united to the tube. The said base is formed with a projection which extends into the body of the powder in the shell, and with an exterior recess or concavity, in the centre of which is a nipple or cone formed to receive a percussion cap. A hole or perforation extends through the nipple and the internal projection of the base.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 16.—Nº 3174.

ASHCROFT, John.—" An improved safety valve for the boilers of locomotives an other steam engines."

The nature of my invention consists in the construction of the valve and its seat, and in the arrangement of the same with a sustaining dome and inclosing case, in such manner that the steam shall be at all times in direct communication with the valve face by means of circular openings in the valve seat, into which steam is admitted from the boiler through the dome and through inlet openings in the steam chambers of the valve seat. Also in an inclosing case which protects the safety valve from dirt or derangement from outside and prevents access to the same by any other than the person in charge, the case being secured to the dome by lock and key, while the engine driver can at the same time open and close the valve by means of a rod outside the case, the said rod carrying a cam which operates the mechanism for holding the valve on its seat; the latter is constructed of anti-corrosive metal. When the force exerted by the steam exceeds the working pressure the valve will be raised from its seat and the surplus steam permitted to escape from the boiler through the valve, which has an open body through the steam chambers which encompass the valve, and through an aperture in the sustaining dome.

[Printed, 1*s*. Drawings.]

A.D. 1868, October 16.—Nº 3175.

DENAYROUZE, Auguste.—" Improvements in dresses and in head gear or helmets for divers."

The dress is made of india rubber or other similar waterproof material, and has sleeves and cuffs. A collar of elastic fabric is attached to the neck. The horizontal portion is perforated with holes.

The helmet or head piece consists of two parts, a spherical part, which covers the face and back of the head, and a collar or neck piece. The spherical part has holes in it for eye glasses. The bottom of the spherical part and the top of the collar are fitted with rings, in which are holes corresponding with those on the dress collar. The throat or neck piece is attached to the metal neck piece by pins, bolts, or screws tightened to form a joint.

The dress may have a straight conical collar, the mask having eye holes and a metal collar, in which is an elastic packing ring, over which is drawn the elastic collar of the dress, held in place by a ring tightened to form a joint. An air tube is fitted to the mask.

The lamp is intended for lighting divers under water, and is supplied with compressed air to support combustion.

Oil, petroleum, or like illuminating fluid is burnt in this lamp. The burner is enclosed in a transparent vessel or chamber closed air tight.

Within the globe or chamber is an apparatus for regulating the supply of compressed air, which feeds it continuously at the circumambient pressure.

A caoutchouc or other similar pipe conveys air to the jet or flame from the burner and maintains combustion. Heated air escapes through a valve at the upper part.

A large volume of compressed air may be accumulated in the regulator and supplied gradually to the burner.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, October 16.—Nº 3176.

PHILLIPS, John.—(*Provisional protection only*.)—" Improvements in the means or apparatus employed " for warming and ventilating buildings."

This Provisional Specification describes arrangement of apparatus for the purpose of imparting heat to currents of fresh air as it enters a building in order to warm the various parts thereof, such apparatus also acting to withdraw or discharge the vitiated air therefrom so as to effect the perfect ventilation of every room or part of the building to which the invention is applied.

For this purpose hot water pipes are enclosed within air tubes or passages, which may be placed or constructed within the external partition or other walls of a dwelling house or other building, or they may be otherwise arranged.

The tubes or passages for the vitiated air surrounding the hot water pipes it is preferred to make of

A.D. 1868, October 17.—N° 3181.

RICKARD, William Thompson, and PAUL, William Carne.—" Improvements in apparatus for " washing ores and other matters, and the separation of the metals contained therein or combined " therewith."

The apparatus consists of a trough with, by preference, a semi-circular or semi-cylindrical bottom, and with or without a recess at the lowest part thereof for the reception of the mercury or amalgam. A screw formed of copper or other metal or metals or metallic alloy or alloys, and the surface of which is amalgamated, is placed vertically, horizontally, or diagonally in the trough, and so as to be capable of revolving. The blade of the screw is so mounted on its spindle that only a space of from one to two inches or thereabouts is left between each of the several turns. The blade of the screw may be formed with or without perforations therein, and is strengthened by passing bars of iron longitudinally through the same from one end to the other. The trough is supplied with mercury and with the ore or other substances, as well understood, and the objects of the invention are effected by the revolution of the screw.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 17.—N° 3182.

LUDLOW, Edwin.—(*Provisional protection only.*)—" Improvements in central-fire cartridges for breech- " loading fire-arms."

In making a cartridge according to this invention the closed end of a metallic tube which forms the powder case of the cartridge is raised into a neck, and upon the shoulder of the said neck the wad or pulp is placed, and upon the latter the rim or flange of the cartridge. The closed end of the neck is next pierced, and the neck expanded, an internal shoulder being left. The mouth of the neck is also opened out and the rim or flange and pulp or wad are thereby fixed in their places. The anvil and percussion cap are finally dropped through the open end of the cup or chamber thus made from the neck and fixed in the usual way. The end of the neck may be left closed, and the interior of the closed end be primed with priming or percussion powder, the anvil being introduced into the neck from the inside of the cartridge. A loose percussion cap is thereby rendered unnecessary.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 17.—N° 3183.

BUNNING, Henry, junior.—(*Provisional protection only.*)—" Improvements in apparatus for burning " combustible liquids in furnaces."

According to this Provisional Specification the liquid is converted into gas or vapour by passing through a zig zag passage in a box or retort; it then enters a reservoir, and thence passes to perforated passages, from which it issues and is burnt. There are also steam passages in which steam is superheated and then allowed to issue into the fire.

The reservoir and these passages all form part of the box or retort.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 17.—N° 3184.

WARREN, Frederic Pelham.—" Improvements in ranges or cooking apparatus."

This invention consists in a peculiar combination of steam jacketted ovens or cookers with the fire places and boilers of cooking ranges. The upper or steam space of the boiler communicates by a suitable pipe, passage, or opening, or pipes, passages, or openings, with a hollow space or casing, or hollow spaces or casings, surrounding the oven or cooker, or ovens or cookers, so that flesh and other food may be cooked without danger of being burnt or subjected in the process to a more than sufficient heat, and so as also to avoid its absorption of moisture, the boiling or stewing thereof being effected by the steam or vapour given off by the evaporation of the fluids contained in such flesh or other food without its being placed or coming into contact with water for that purpose. By preference the ovens or steam cookers are arranged at the side or sides of the fire place within the main casing of the range, so that the casing forms a part of the jacketting, but they can be placed in other situations, and may in many instances be advantageously placed above the boilers of ordinary ranges, in which cases apertures are formed through the cover or covers of such boilers, and the jacketted ovens or cookers are formed with hollow cones or projecting parts fitting into the thumb recesses in the boiler covers.

The ovens or cookers are provided with hollow steam shelves, and are arranged so as to be entirely surrounded by the steam jacketting, for which purpose the doors are hinged to the main body, and are made hollow, and arranged so as to communicate with the hollow steam space surrounding the main body of oven or cooker, and means are provided for the escape of the steam after doing duty in the jacketting.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 17.—N° 3185.

GREEN, Richard Angell.—" Improvements in the preparation or treatment of the folded paper sh " used for printed works, and in apparatus for effecting such preparation or treatment."

My improvements have for their object the facilitating of the folding and separation of sheets printe making up into books, pamphlets, journals, and other works, which I effect in the following manner :—

I punch or perforate the paper with numerous holes along the lines of fold, which have to be afterw separated. The paper is thus weakened along the lines of perforation, and can be more easily folded torn apart.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 19.—N° 3186.

WRIGLEY, Thomas, and YATES, Walter Edward.—(*Provisional protection only.*)—" Certain imp " ments in ' beaming warps ' and in the mechanism connected therewith."

The novelty of the invention consists in governing the traverse motion of warp threads when pa on to the warp beam preparatory to " looming," so as to equalize and regulate the layers of yarn acco to the inequalities, by means of an expanding and contracting " reed guides " or dents which are gov in their movement by bowls and levers to which such reed in connection, the said bowls being caus springs or other equivalent against the flanges of the warp beam, thereby expanding or contractin yarn guides according to the skewed or irregular position of such flanges relative to the beam.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 19.—N° 3187.

WRIGLEY, Thomas, and RICHARDSON, John.—" Certain improvements in looms for weaving."

The novelty of our improvements relates more particularly to a compensating motion for regulatin weight or pressure upon the beam so as to equalize and keep at a uniform tension the warp threa self acting means during the manufacture of the cloth ; and the novelty consists in securing upon th of the beam shaft a worm which gives motion as the beam delivers its warp to a worm wheel, the bo which is provided with a fine thread or screw which in its revolution on a vertical spindle which is prev from turning gradually releases the tension of a spring that exerts a pressure on a lever in connection the beam ; or the revolution of the worm wheel may be connected through the medium of guide pu with the ordinary weights, so as to regulate them during the operation of the loom.

[Printed 10*d*. Drawing.]

A.D. 1868, October 19.—N° 3188.

COCKSHOOT, Joseph, junior, and WEATHERILL, Henry. — (*Letters Patent void for want of Specification.*)—" Certain improvements in the construction of carriage axles and axle boxes."

The novelty of the invention consists in forming a flange on the axle of ordinary carriages or veh that will admit of the axle box being secured thereto by means of bolts and a loose flange or collar encircles a groove formed in the axle collar, thereby firmly retaining the wheel to the axle should the of the axle inside the collar break.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 19.—N° 3189.

HUNT, Bristow.—(*A communication from Sarah Hogan Brisbane.*)—" An improvement in scissors."

This invention consists in the combination with a pair of scissors of a gauge or measure, by mea which bands or strips of any desired width may be cut from any fabric, paper, or such like material, line parallel with the edges of the same.

This is accomplished by attaching to one of the blades of a pair of scissors a gauge or measure, w may be secured to the blade in any suitable manner, so that the same may be adjusted laterally at r angles with the blade.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 19.—N° 3190.

CLARK, Alexander.—(*A communication from Henry Thompson.*)—" An improved submarine telesc " lantern."

The lantern is composed of a hollow glass cylinder with a lamp at bottom, and air chamber supplied by pipe rising up to the top of the lantern into a cap or hood and protecting tube.

A similar pipe is employed to conduct gas (if such be used) from a reservoir above. Other tubes are also provided to convey air from the chamber below around the flue.

A meter may be placed in the air chamber for regulating the pressure at the burner when gas is used. The air may also be passed through a similar meter. A glazed opening is provided at one side of the upper protecting tube, to which opening is adapted the open end of an inner smaller tube containing lenses, which, in conjunction with telescopic lenses arranged at top of said inner tube, serve, on applying the eye thereto, to examine the objects upon which the light of the lantern is thrown. The eyeglass is preferably mounted in an india-rubber tube. The apparatus, which is weighted at bottom, is made in lengths jointed together for the sake of portability, and where so put together would serve as a sounding pole.

[Printed, 8*d*. Drawings.]

A.D. 1868, October 19.—N° 3191.

WHITEHOUSE, Cornelius. — "Improvements in the manufacture of augers, boring bits, and other "similar tools."

According to this invention the tools are first cast of steel, homogeneous iron, or other compound of iron and carbon in a mould, and after removal from the mould are annealed so as to decarbonize or soften them. While in this soft state the required parts are bent, filed, and screwed, or otherwise treated according to the tool being made. The tools are next hardened or their surface reconverted into steel and finally polished.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 19.—N° 3192.

NEWTON, William Edward.—(*A communication from Harvey Lester Lowman.*) — "Improvements in "the manufacture of gun barrels, vices, and various kinds of tools and instruments in which the handles "are secured in open eyes."

Gun barrels are formed from short lengths of bar metal by punching holes down their centre and then rolling them out.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 19.—N° 3193.

HOWES, William Howes.—"Improvements in movements or actions for swing frame looking glasses, "swing windows, show case doors, and other swing frames."

The invention consists in forming one part of the movement with a stud, which passes through a corresponding hole formed in the other part, and in order to enable the swing frame to rest in any position a washer is employed formed to fit a square formed on the end of the stud, a screw being employed to force the parts together and thereby to bind them to the extent required. Or in some cases a toothed segment taking into a moveable toothed rack is employed, the parts being forced together by means of screws. Or a worm on one part may be employed to take into a toothed segment on the other. Or a spring catch may be employed to take into ratchet teeth formed on a segment.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 19.—N° 3194.

LAKE, William Robert. — (*A communication from William D. Cutler.*)—"An improved method of "preparing, dessicating, and preserving fish."

The fish after having the skin and bones removed are subjected to the action of a grinding machine and thoroughly broken up. They are then dessicated upon slabs of metal or stone, which are gently heated by means of steam pipes. The prepared fish may then be packed in boxes or otherwise for transportation.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 19.—N° 3195.

RAE, James.—"Improvements in carts for removing refuse matter from roads and for watering the same."

My improvements relate to the construction of a cart which may be used either for watering roads or for removing mud and filth therefrom. I construct the cart with a cylindrical or other tank, which is supported on the axle of the cart in such a manner that it may be filled through a suitable aperture and may then be reversed or turned over to empty itself. I effect this adjustment of the tank by means of a worm and wheel or by bevel or other gearing. When the cart is to be used for watering roads the tank is provided with perforated pipes. The said pipes are fitted with valves which are so arranged that the water may be thrown from either the sides or rear of the cart or from both sides and rear together. The driver's seat is supported upon the front rail which unites the shafts of the cart.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 19.—N° 3196.

FITCH, William.—(*A communication from George Robert Wilson.*)—" Improvements in the carriages for " ordnance, and in devices for operating the same and checking the recoil thereof."

This invention consists, first, in a novel method of constructing carriages for ordnance; second, in a novel construction of the chassis, and of the securing and arranging of the gun carriage thereon; third, in providing the carriage and chassis with devices for operating the gun; and, fourth, in a novel method of checking the recoil of the gun and its carriage, all as hereinafter more fully explained. The gun carriage is constructed of metal plates which are united in such a manner that strengthening bars are dispensed with. The carriage is mounted upon rails which are provided with racks. Toothed wheels on the sides of the carriage gear into these racks and also into pinions, which by means of a suitable handle are operated to move the carriage. Wooden blocks are attached to the racks, and similar blocks are fixed on the carriage. These blocks are so arranged that those on the carriage press with a constantly increasing force upon the other block as the carriage recoils. The blocks on the carriage are adjusted by means of wedges, which may be operated by a hand wheel or otherwise.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, October 20.—N° 3197.

DORE, William, and THORNHILL, James.—(*Provisional protection only.*) — " Certain improvements " in motive-power engines."

The novelty consists in constructing a steam engine with two or more cylinders, and so placing them that the first cylinder will deliver its high pressure steam into a second cylinder of larger capacity, out of which it is again blown or passed into a third cylinder so as to utilize the whole of its power, after which the remaining steam is exhausted into the atmosphere, or after it has used its effective strength in the high and low pressure cylinders it may be exhausted as from one ordinary high pressure cylinder in contradistinction to being condensed in the second or low pressure cylinder.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 20.—N° 3198.

BONNEVILLE, Henri Adrien.—(*A communication from Richard Werdermann.*)—" Improvements in " safety lamps for miners."

This invention relates to a new and improved lamp for miners, which extinguishes itself automatically when the gases become over-abundant inside the metallic wire-gauze, or when an attempt is made to open the same.

[Printed, 8*d.* Drawing.]

A.D. 1868, October 20.—N° 3199.

ELCE, John.—" Certain improvements in mules for spinning and doubling."

This invention consists, first, in regulating the amount of twist in each stretch by connecting and disconnecting the worm on the rim or twist shaft.

Secondly, in checking the momentum of the spindles of " box organ mules " by a break strap acting on a break pulley on the twist pulley shaft.

Thirdly, in an apparatus for regulating the position of the straps on the putting up and winding on pulleys.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 20.—N° 3200.

FARRAR, John Alcock, and HUNTLEY, Benjamin Ralph.—" Improvements in the hatches and " cabin tops of ships for ventilating and other purposes."

The novelty of this alteration and invention consists in the hatches of ships being made of iron, steel, or other metal, and water-tight, so as to do away with tarpaulings, battens, &c., and in having a manhole inserted on the top of one or more of the hatches or cabins so as to ventilate the holds and cabins. The manhole is used as a means of entering the hold for the purpose of trimming, discharging, or shifting the cargo without taking off the hatches.

[Printed, 8*d.* Drawing.]

A.D. 1868, October 20.—N° 3201.

VOIGT, George.—(*Provisional protection only.*)—" Certain improvements in railway breaks."

The novelty of the invention consists in applying the " breaks " of railway carriages by self acting mechanism through the medium of longitudinal sliding bars secured to each carriage above the axles which are brought into contact with each other when the engine reduces its speed in such a manner that they successively push each other forward throughout the length of the train when brought into contact with a fixed buffer on the tender at the time the engine reduces its speed, the said bars applying the breaks when pushed forward through the medium of levers in connection with a tube, the partial turn of which applies the breaks, the said tubes being retained in a fixed position and prevented from turning when the ordinary buffers are not compressed by contact with the buffers with the next carriage, such lock or retention being effected by a snug or projection on the buffer shaft which is elongated and slides in a slot provided in the tube actuating the breaks.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 20.—N° 3202.

LAUENSTEIN, Charles. — (*A communication from Leo Schuch.*) — (*Provisional protection only.*) — "Certain improvements in the method of purifying and decolourizing paraffine."

The novelty of the invention consists in bleaching or decolourizing paraffine by first mixing with it when in a heated soluble state a small portion of "residue phosphorus," after which it is further clarified by adding thereto a small quantity of "stearine," which saponifies the whole compound, the effect of which precipitates the floating particles of residue phosphorus, leaving the paraffine thoroughly decolourized.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 20.—N° 3203.

CHAPMAN, Gavin.—"Improvements in treating sewage in order to obtain valuable products therefrom."

This invention has for its object to obtain valuable products from sewage whilst obviating the pollution of rivers by it; and it consists,—

Firstly, in treating the sewage with caustic lime or other suitable alkaline agent in order to precipitate solid matters to be used as manure, and to set free ammonia.

Secondly, in heating the separate liquid with the ammonia in solution in order to distil off and thereby recover the ammonia.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 20.—N° 3204.

HUGHES, Edward Thomas.—(*A communication from Edward Baldwin Manning.*)—"Improvements in "tea and coffee pots."

This invention relates to improvements in metallic tea and coffee pots, and consists in lining the same with a mineral, earthern, or similar substance, so as to prevent the tea coming in contact with the metal.

[Printed, 1*s*. Drawings.]

A.D. 1868, October 20.—N° 3205.

HARRISON, Edward.—"An improvement in mills for grinding and flouring grain."

This invention has for its object, first, combining with the millstones the bolt so as to separate the flour from the meal or hulls by the same apparatus; and, secondly, to cheapen the construction of the mill; and the invention consists, first, in combining with the millstones a bolt cloth, so that the meal as it passes from the stones is thrown directly upon the bolt cloth, the flour or finer portion passing through the cloth, while the hulls or coarser portion which cannot pass through the cloth escape from the mill by a separate exit; and, further, in constructing the several parts of the casing and frame in one and the same piece, whereby much expense is saved; and, further, in the arrangement of a rocker feeding shoe beneath the hopper to which a vibratory movement is given; and, further, in arranging upon the edge of the stone or stones a band as a means for adjusting and securing the stones.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, October 20.—N° 3206.

SYKES, John, and **MALIN**, George.—(*Provisional protection only.*)—"An improved composition to be "used for 'filling up' the bodies of carriages and other substances previous to receiving the colouring "matter."

This invention relates to a composition to be used for "filling up" the bodies of carriages and other substances previous to receiving the colouring matter.

[Printed, 4*d*. No Drawings.]

HUGHES, EDWARD THOMAS.—(*A communication from Chauncey Orrin Crosby.*)— I
" machines for polishing and finishing needles, and in apparatus for arranging the need
" thereto."

This invention relates to mechanism for polishing or finishing needles, also to a device
the needles to present them all in the same position to enter the polishing machine; an
consists, first, in one or more polishing cylinders placed parallel to each other, and revolving
surface of a carrying band, upon which the needles lie, and combined with a slide which mo
across the band and resting upon the needles so as to give to the needles a rolling moveme
beneath the polishing cylinders so as to polish the entire surface of the needles.

Secondly, the arrangement of an inclined plane or table with the proper delivering device,
needles are delivered near the higher end of the inclined table they by their own gravitation
the incline, turning by their own inclination, the head rolling faster than the point, so that
heads of which lie toward the right, will roll to the left side of the machine, and vice versa, the
down the incline.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, October 20.—N° 3209.

POSENER, DAVID, POSENER, ADOLPHE, and UNGER, MARCUS.—(*Provisional prot*
" Improvements in holders for glass and other globes or shades for gaseliers, chandeliers, and
" purposes."

Gas glasses are secured in the holders by means of spring catches.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 20.—N° 3210.

BRINJES, JOHN FREDERICK.—" Improvements in centrifugal machinery or apparatus em
" separation of fluid from other matters."

Imparting a continuous travelling motion to the wire gauze of centrifugal machines in a
rotatory motion with the drum, such wire gauze being in the form of endless bands moun
rollers or in the form of cylinders revolving on their own axes, but carried round with the dru
given to the bands or cylinders by suitable screw and worm wheel gearing driven from th
Discharge openings are left at intervals round the drum, and radial spouts are employed for
incoming matters towards one extremity of each travelling band, so that by the time the said
arrived at the discharge opening the treatment will have been complete, and the solid matter
discharged. By this means the necessity for stopping the machine for charging and discharging
This arrangement of the wire gauze also facilitates the cleaning thereof by the action of the cen
itself.

[Printed, 1*s.* Drawing.]

A.D. 1868, October 20.—N° 3211.

Gum elastic or other equivalent material is in some cases interposed between the two soles so as y interior, which is at the same time ventilated by the grooves.

Drawing.]

A.D. 1868, October 20.—N° 3212.

James Makinson, and **VINE, Edward Charles**.—(*Provisional protection only.*)—nts in fastenings for stays, corsets, and bodices, which improvements are also applicable to s of wearing apparel."

ion relates to connecting together series of catches to the busks by means of a rod, and acting uch catches for the holding of the parts from the other busks by a spring, whilst the releasing is key or other suitable moveable piece acting on one of the catches, and through the connecting them simultaneously.

ion is applicable to other articles of wearing apparel.

No Drawings.]

A.D. 1868, October 20.—N° 3213.

, **William**, and **RAWLINS, Washington Champion**.—" Improvements in means and o enable boilers and furnaces to heat expeditiously and consume their smoke and generate quickly than heretofore."

ovements consist of an apparatus comprising a case or " saddle " placed in or forming part of nd which may be used as a bridge, and communicating with the boiler and its water by suitable ed in connection with a boiler. Air pipes pass through the apparatus, which have openings r into the furnace, causing complete combustion of fuel.

Drawings.]

A.D. 1868, October 20.—N° 3214.

D, **Joseph**, junior.—" Improvements in the construction of socket joints for metal piles and

ting my improved socket joints I form a tube of wrought iron or steel either by bending a metal and welding its edges together, or by coiling a bar of the same upon a mandrel and then by welding together a series of rings or hoops of the required diameter. The interior of the is bored or otherwise formed to fit the ends of the sections of the pile or column to be exterior of the socket may then be turned to give a neat and finished appearance to the work; the exterior of the socket may be made hexagonal or of any other shape. The socket may l and tightly shrunk upon one of the sections. The end of the section to be united or coupled is then inserted into the socket, the two ends being preferably made to butt together. I then ough both the socket and the pile, into which holes I insert keys, pins, or bolts, which may be erwise secured.

No Drawings.]

A.D. 1868, October 20.—N° 3215.

'homas, and **HEARTFIELD, John**.—" Improvements in sponging or bath gloves, part of tion is also applicable to the joining india-rubber sponge."

o this Provisional Specification sheets of porous vulcanized india rubber are cut to suitable ented together with india rubber cement; the cement is afterwards vulcanized by chloride of d with bisulphide of carbon.

No Drawings.]

A.D. 1868, October 21.—N° 3216.

John.—(*Provisional protection only.*)—" Improvements in chimney terminals, also applicable rs."

ion consists in making chimney terminals or ventilators with a series of vertical blades at their th interstices of a long narrow form between them, such blades being formed convex on their and concave on their outer surface. Over and a short distance from the said interstices are des curved so as to present their concave surfaces towards the interstices and to overlap the s of the inner blades, other interstices of a long narrow form being left between such outer

A.D. 1868, October 21.—N° 3224.

SE, **Edward Orange Wildman.**—" A new (or improved) mode of protecting insulated
es."

n consists in the application of an external coating to previously insulated telegraphic wires,
onsisting either entirely or in part of such compounds as are known as parkesine or other
onsisting essentially of a solution of xyloidine, or of the same in conjunction with oils, resins,
igments, or other body giving non-conducting materials.

No Drawings.]

A.D. 1868, October 21.—N° 3225.

enry.—" Improvements in mowing machines and in apparatus applicable to adapt the same
and sweeping."

nal Specification describes a combined lawn mower and sweeping machine.

Drawing.]

A.D. 1868, October 21.—N° 3226.

, **Catherine**, administratrix of **William Jardine Combe MacMillan.**)—(*A com-
n William Jardine Combe MacMillan.*)—" Improvements in protecting iron ships and other
rfaces from corrosion and marine growths, and in compositions to be so employed."

this Provisional Specification gutta percha and resin are incorporated together to form a
ition. Also for the same purpose phosphorous dissolved in bisulphuret of carbon is mixed
of shellac in alcohol.

No Drawings.]

A.D. 1868, October 21.—N° 3227.

lter **Kittredge.**—" Certain new and useful improvements in carriage wheels."

f the said invention consists in an arrangement of the ends of the filloe, viz., so as to be
e ends of male contracting screws, or by plates of metal separate from the nuts of such
ed between the two and sustained by such screws.

rmation of the halves of the nuts with recesses in their inner sides.

ing the tire with its inner surface concave transversely to fit to a corresponding convexity of

ormation of the block which is arranged between the ends of the tire with a recess on its
mbination with the formation of the nuts with counterparts to enter such recess.

ombination of braces with the tire, the nuts, and the right and left screws thereof.

mbination of a holding bolt with the wheel and the tire contracting mechanism.

Drawing.]

A.D. 1868, October 22.—N° 3228.

rederick, and **WARD, Richard.**—(*Partly a communication from John Clayton Randall.*)—
of and means or apparatus for facilitating the capture of whales and other fish or animals."

n relates to paralyzing whales and other fish or animals by causing a current of electricity
or in connection with parts of their bodies.

No Drawings.]

A.D. 1868, October 22.—N° 3229.

Kenelm John.—(*Provisional protection only.*)—" An improved method of conveying rotary
les."

t is in connection with Her Majesty's Letters Patent granted to me, 25th January 1868, for
method of conveying rotary motion to axles," and consists in making use of a flexible band
l times round the axle to be rotated, and which band is attached to and worked by means of
notive pulley, as described in such Letters Patent in such a way as to cause an alternate
loosening of such band on the axle as the drum is moved forwards or backwards. The axle
comes a sort of mechanical "whip top," the drums and hands being the whips for the same.

No Drawings.]

A.D. 1868, October 22.—N° 3230.

MENNONS, Marc Antoine François.—(*A communication from Philip Syng Justice.*)—" " engine for raising and forcing water."

This invention relates to an improved pumping engine composed of two bowl castings bo and separated by a textile diaphragm, with which is connected the stem of a steam valve. chamber of the engine being filled with water, by the inlet pipe, steam is admitted below th which, being thus forced upwards, expels the water through an outlet pipe, and closes at s steam valve. The steam being then condensed by injection of water from below, a vacuum i diaphragm is depressed, reopening the valve, and the water to be raised entering from the inl is expelled by a new admission of steam from below, and so on alternately.

[Printed, 8*d*. Drawings.]

A.D. 1868, October 22.—N° 3231.

RYDER, John.—" Certain improvements in 'kilns' for burning bricks, lime, or other similar

The novelty of the invention consists in constructing a " kiln " for burning bricks, lime, or materials in which the draught is passed in a direct circular current, first, to the top of the through radiating apertures to the chimney outside, these radiating apertures being provided w so that when any one or more of them are closed the heat of the kiln can be directed into an the kiln required.

Secondly, in burning smoke I first light up or heat the kiln or green bricks with coke, after the bricks are thoroughly heated, I fire up with coal.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 22.—N° 3232.

AKRILL, Charles.—(*Provisional protection only.*)—" Improvements in apparatus for burni " and other combustible liquids."

According to this Provisional Specification steam or air under pressure issuing from a nozzle is m another nozzle connected by a pipe to a vessel containing combustible liquid. The steam or air draws out the combustible liquid, and striking against it divides it into spray, in which state it is

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 22.—N° 3233.

BOUSFIELD, George Tomlinson.—(*A communication from Edwin Sabine Renwick.*)—" Imp " in machinery for propelling water craft."

The object of the invention is to enable screw propellers to be successfully applied to the sides The invention consists of seven new combinations of instrumentalities, viz^{t}.—

1st. The combination of the hull of the vessel with a shaft chamber (for the propeller shaft) the exterior of the hull and a screw propeller overhung at the end of said shaft chamber.

2nd. The combination of the hull of the vessel, the exterior shaft chamber, and the screw propel stay or bracket to sustain the weight of the propeller in whole or in part.

3rd. The combination of the hull of the vessel, the exterior shaft chamber, and the overhu propeller, with a guard attached to the side of the vessel above the water line for the purpose of p the propeller from coming in contact with the quays.

4th. The combination of the hull of the vessel, the exterior shaft chamber, the screw propeller, t bracket, and the guard.

5th. The combination of the hull of the vessel, the exterior shaft chamber, the screw propeller, engine cranks arranged diametrically or thereabouts opposite each other, so that the momentum of the of the engines and their appurtenances is balanced or thereabouts.

6th. The combination of the hull of the vessel, the exterior shaft chamber, and the screw propel pillow block frames of **U** form arranged with the closed part of the frame at the exterior of the scr so that the crank shaft can be drawn into the vessel from the exterior shaft chamber.

7th. The combination of the crank shaft of the screw propeller with two steam cylinders of une (the steam from the smaller passing into the larger), and with a four ported slide valve, which regula admission and discharge of steam for both cylinders.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, October 22.—N° 3234.

RLES DENTON.—(*A communication from Baron Ludwig Almos Lo Presti.*)—" Improvements
ruction of railways, and in the rolling stock and structures therefor."

this invention consists in constructing railways of very narrow gauge upon a single continuous
ails are fixed on either side of this continuous beam, and the latter is either laid loosely upon
ports placed upon the ground or it may be fixed and elevated upon piles driven into the ground.
ock is constructed so that the bodies of the carriages, &c. stand at a very small distance from
the timber way. Their stability may be increased by the use of separate horizontal or inclined
arried by the carriages, &c., and arranged to bear either against each side of the timber way or
les of the rails. Or the wheels of the rolling stock may be inclined for the same purpose. The
lighter than heretofore, and may consist of a flat or trough shaped section bedded in the timber
heels to run in. For obtaining greater adhesion for the wheels on inclines, that part of the rail
greatest friction is made of a hard metal, while the other portion is made of softer alloy.
ped rails are employed, the traction wheels alone are formed to run thereon, while the other
on flat surfaces formed upon the sides of the **V** rails.

using metal rails they may be of hard wood; and in place of employing two rails, the upper
timber way may constitute one broad rail for a broad flanged wheel, placed centrally under the
to run upon. Side wheels may be combined with the central wheel. Where the railway runs
l roads, grooves may be cut in the paving for holding the rail. Where two lines converge
gth of timber way is arranged to turn on a joint, as a switch. For changing the rolling stock
to another, parts of the timber way are made to move laterally on wheels, or centrally as a
carrying the timber way over roads, supports built up of wood balks, or of blocks of stone laid
above the other in a pyramidal form and secured by wedges, bolts, &c., is employed. Antific-
placed between the timber way and the top of the support to prevent motion being imparted
crossing rivers similar supports, or in place thereof pontoons, may be used. The floating
ed to the land parts. The height of the rails may be made adjustable by screws or hydraulic
r large spans the timber way is strengthened by trussing, &c. The under framing of the
s suspended from the axle boxes of the wheels, which are carried in bogie frames connected so
with couplings, buffers, &c. The bodies of the carriages are removeable from the under
to convert passenger carriages into goods trucks.

yres are without taper, and the rims are much deeper than ordinary railway wheels.

tives are provided with fore and aft bogie trucks, the wheels of which are coupled together by
ecting rods with ball and socket joints and rocking levers.

e present arrangement of communicating the power to the driving wheels, the steam cylinders
rough pipes so as to act upon rotary pistons fixed to the axle of the driving wheels. For
motion of the engine the pump is connected to an arrangement of adjustable excentrics on
aft. To increase the tractional force the above mentioned rotary engines may be applied to
l carriages. The wheels may have wood surfaces to increase adhesion, and which are brought
clines. Horizontal bearing wheels may be used to increase the stability of the locomotive.
steep inclines endless chains, with studs and cogs thereon, are arranged at the side of the
hese chains are caused to revolve by cogs upon the driving wheel, and at the same time are
levers worked from the engine in such a manner that the studs are forced against the sides of
y. The driving wheels are situated beyond the boiler and fire box to allow these latter to be
ils. The before mentioned arrangements may be used for tug locomotives for canals. The
e like a pair of tongs nipping the sides of the timber way, and are worked by a hand screw or
gnetic apparatus. For quickly unloading goods, the trucks are provided with a removeable
can be lifted out and placed either in another truck or where required.

em little or no levelling of the ground is required, tunnels and deep cuttings are dispensed
g portable the timber way can be readily moved from place to place as required, and from the
f using frequent sharp curves, can be laid in narrow gorges or passes of mountainous districts,
nt the necessity of steep inclines.

8*d*. Drawings.]

A.D. 1868, October 22.—N° 3235.

IAS.—" Improvements in or applicable to machinery for disintegrating or pulverising minerals,
chemicals, artificial manures, and various other substances and articles of manufacture, and for

outer cage.

3. In the use of several knives, separately or connected in a ring, stationary or rotati
distances from the axis, to break up lumps, in place of one knife hitherto used.

4. In arranging the discs with hollows, so that the cages may be all of the same widt
same length.

5. In covering the opening of the central cage, leaving a spout to feed the mater
arranging the side or end casing to commence at the outer cage.

6. In lubricating the bearings of the hollow shaft by forming them of bosses secure
solid shaft.

7. In tightening the bearings or bushes of the hollow shaft by steps fitted to the sha
tightened by caps and screws, or by set screws. Or by cones on the solid shaft and cone
cone bosses and cones in the hollow shaft.

8. In combinations and arrangements whereby the solid shaft and hollow shaft
separate plumber blocks, the solid shaft passing through the hollow shaft, but not
mounting each disc on a solid shaft, dispensing with the hollow shaft, the two shaft
to end in separate plumber blocks.

[Printed, 2*s*. Drawings.]

A.D. 1868, October 23.—N° 3236.

CARRINGTON, William Thomas, GIELGUD, Henry, and WESSELY, Zde
(*Provisional protection only*.)—" Improvements in breech-loading fire-arms."

This invention consists in an arrangement wherein the breech of the barrel is close
moved vertically up and down in a slot by means of the trigger guard acting as a
block contains a sliding bolt acting as the hammer of the gun, and so actuated b
connected to the trigger guard and by a spring contained in the latter that the dra
breech block ready for charging moves the bolt backwards and compresses the spring,
is continued during the closing up of the breech block, the sliding bolt being held d
a spring catch or sear. On releasing this catch or sear by the trigger the bolt is t
the spring and lever and effects the firing of the cartridge. A bell-crank lever is p
acted on by the breech block when descending for throwing out the cartridge case.

In another modification the breech block is made to slide backwards instead of downwa
bolt constituting the hammer is held back during the forward motion of the breech block
which is released by the trigger on firing, when the bolt is thrown forward by a spring sit
the breech block.

In another modification the breech block turns on a fixed pin and contains only a striki
a sliding spring bolt in the breech of the gun, which is pushed back by a finger on the hin

the boiler or other source of pressure without employing the expansive action of steam, et cylinder; the steam, et cetera, producing the initial movement being exhausted as soon pressure begins to act.

By another modification of the valves they may be applied to pumps, the fluid set in latter being caused to actuate the said valves.

By a further modification a similar valve to that last referred to is adapted to govern the steam or other fluid working an engine, but in this case a tappet or other mechanical device part of the travel, which is then completed by the direct pressure on the valve of the steam or of fluid from other source of pressure.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 23.—N° 3242.

DE REDON, Jean, and **FAUCHEUX**, Theodore. — (*Provisional protection only.*) — " " in the manufacture of cigars and cigarettes, and in the apparatus for effecting the same."

The formation of covers to cigars and cigarettes of tobacco leaf prepared by extraction of also of a strong cover made from fibres and refuse of tobacco converted into a pulp after mixture of lime or alkalies, and formed into sheets, and applied while in a most state. Th the action of top and bottom surfaces or planes which roll the tobacco over the wrappe encircles the tobacco when pressed into a cylindrical shape.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 23.—N° 3243.

GREGSON, James, and **MONK**, William.—" Improvements in looms for weaving."

The novelty of this invention consists in,--

First, a reduction of mechanical appliances, a consequent saving of wear and breakages.

Second, saving of leather strapping and checks.

Third, the cloth wove by these looms will come out much cleaner and free from black, oil, a

[Printed, 8*d*. Drawing.]

A.D. 1868, October 23.—N° 3244.

SAUTTER, Maurice.—(*A communication from Louis Robbins.*)—" Improvements in prepari

The method consists, first, in saturating the wool with the light vapours obtained from a petroleum, naphtha, or other similar substances; and, secondly, in supplying oil to the wool vapour after it has been properly cleansed and before it has been converted into fabric.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 23.—N° 3246.

JAMES, Charles Bartleet.—" Improvements in needle cases and wrappers."

This invention refers to the formation of an outer case or wrapper capable of being closed, and furnished with a sheath or sheaths for containing a packet or case or more than a single packet or case of needles. A strip of suitable material is secured inside the outer case, and passing through into the sheath is secured to the inside of the same in such manner that the action of the strip will be to propel or force up the packet or case of needles partly out of the sheath upon the case being opened, and to assist in closing the same when the packet is pressed down into the sheath.

[Printed, 6*d*. Drawing.]

A.D. 1868, October 23.—N° 3247.

BERNARD, Julian.—" Improvements in preparing and dressing ores and minerals, and in the machinery " or apparatus employed therein."

This invention relates, firstly, to an improved stone, ore, or mineral breaking or crushing machine, and consists of the use and employment of a series of moveable teeth or segments made of steel or other metal placed upon and secured in blocks or rollers containing suitably formed grooves or recesses for the reception of such teeth or segments, and admitting of their ready removal or renewal without involving the removal of the blocks or rollers from their shafts or the shafts from their bearings. Motion may be imparted to these rollers or blocks by gearing and in the usual manner. Secondly, it consists of imparting a lateral and differential motion to crushing rollers and which may be effected by means of a cam or eccentric secured to the shaft or shafts on which the rollers are secured, and which is so placed and arranged that its differential outline comes in contact with a fixed stud or pin in the course of its revolution, the object of which motion is to cause the surfaces of such rollers to wear out more evenly.

Thirdly, my invention relates to an improved method and means of sizing or dividing the materials, and consists of combining plain inclined surfaces with inclined perforated plates or sieves over which the material to be operated upon is passed, and by which a more perfect result is obtained. The whole of the perforated plates and plain inclined plates being placed and arranged in a suitable framing common to the entire number employed, and leading into separate divisions or compartments, in which the materials are deposited.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 24.—N° 3248.

BAGGS, Isham.—" Improvements in smelting, carburizing, and purifying iron."

This invention consists in smelting iron by means of combustible gases and vapours in place of mineral fuel. The gases and vapours are used under pressure. They are blown into the furnace in combination with a blast of atmospheric air, with which they are previously mixed or not, according to the requirements of the furnace. The relative quantities of the gases are subject to regulation by suitable means.

The gas making apparatus is combined or connected with the furnace. The carbonization of the iron is effected by blowing a carbide, or a material containing carbon through the furnace or the molten iron in the form of gas, vapour, or dust.

When the furnace is to be stopped, a quantity of mineral fuel is thrown into it, to prevent the materials from falling through the crucible, on renewal of action, or the iron remaining within from becoming solidified.

The purification of the iron is effected by blowing hydrofluoric acid and chlorine gases through the molten metal, or otherwise bringing them into intimate contact.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 24.—N° 3249.

FERGUSON, Robert, and LORD, George, executors of James Anderson.—" Improvements in the manufacture of felts, and in the machinery connected therewith."

This invention consists in using native mineral pitch or asphaltum and vegetable or mineral tar or animal, egetable, or mineral oil in the manufacture of felted materials for sheathing, sheeting, or covering ships, alls, floors, roofs, and the like in lieu of the other bituminous substances now or heretofore used in the anufacture of these materials, and in coating the surface or surfaces of the materials thus manufactured, nd of felts however manufactured with a thin layer of such asphaltum and tar or oil with or without chalk r whiting added thereto, and in covering or dusting such surface or surfaces with shoves or sand.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 24.—Nº 3250.

SPRATT, James.—" Improved preparations of food for horses, cattle, game, poultry, and other domestic " animals ; such preparations being capable of admixture with compounds for the production of a medicated " food for man."

The improved food is prepared by mixing farinaceous matters, grains, and saccharine and other substances with the fruit of the date palm, and baking them into the form of bread, biscuits, and cakes. Such biscuits may, if required, be dipped into lime juice or lemon juice to be used as a medicine for sailors and passengers by sea.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 24.—Nº 3251.

HUNT, Bristow.—(*A communication from David Newell Brown Coffin, junior, Thomas Hunter Johnston, and Benjamin Woodward.*)—" Improvements in power capstans."

This invention comprises—First, conical or taper pinions attached to angular or inclined shafts in combination with the barrel of a capstan.

Second. Connecting the fulcrum gear of a power capstan to the bed plate automatically by furnishing each with a series of inclined faced lugs.

Third. Duplicating the inclined faces of the lugs on the fulcrum gear and the bed plate in reverse order, so as to operate in both ways.

Fourth. An inclined or wedge shaped lifter, made movable separately from the parts to be locked together, in combination with the sliding bolts of a capstan.

Fifth. The arrangement of one or more series of inclined wedge shaped lifters upon a ring or circular connection, so as to operate simultaneously on several bolts in the locking mechanism of a capstan.

Sixth. Casting the lower journal part of the spindle or shaft of a capstan on and as a part of a bed plate.

Seventh. Casting the lower journal part of the spindle or a shaft of a capstan hollow, in combination with its formation on and as a part of the bed plate, irrespective of the construction of the upper portion.

Eighth. Compounding the spindle or shaft of a capstan by forming the lower journal part on and as a part of a bed plate, and inserting the comparatively lighter wrought part to form the upper portion.

Ninth. The employment of a shaft extended from the capstan in combination with the shafts, with suitable power multiplying gear.

Tenth. Locking the fulcrum gear of a capstan to the bed plate by means of bolts movable upwards from beneath into contact therewith.

Eleventh. The employment of a series of inclines movable in a circle, and so applied in combination with the fulcrum gear of a capstan so as to lift said gear from its position of inaction to the proper position to be acted on by gears playing into it.

Twelfth. Fastening the cover of a capstan by means of lugs in combination with sockets or grooves in the hub.

Thirteenth. The arrangement of the cover fastening in relation to the locking mechanism of the capstan, so that when the cover is rotated to a stop in one direction the bolts will be adjusted for the simple power and the cover fastened, and when rotated in an opposite direction to a stop the cover will also be fastened and the bolts adjusted for the multiplied power, while in an intermediate position the cover is unfastened and may be removed.

Fourteenth. Suspending the fulcrum gear to the rotating body of the capstan.

Fifteenth. The arrangement of the gears, pawl wheel, barrel, friction, and chain wheel, and the points of disconnecting, whereby both barrel and chain wheel are brought under control of the friction mechanism, and yet used separately for winding, heaving in, and so forth.

Sixteenth. Arranging the windlass shaft in combination with the friction band of a barrel of a windlass.

Seventeenth. The use of partly circular heads and sockets in combination with the pawls of a windlass.

Eighteenth. Forming a groove under the projecting part of capstan's base.

Nineteenth. The application of pawls to a capstan by means of a cast joint or hinge in any manner so as to allow the pawl to operate in both directions.

Twentieth. The employment of a side opening in combination with enclosed bolts in the construction of a capstan.

Twenty-first. The arrangement of inclined lifters made movable in combination with the lock notches or spaces, so as to be used both to slide the bolts out of connection automatically and also at the pleasure of the operator.

Twenty-second. The arrangement of inclined lifters in duplicate and in reverse order in combination with ock notches or lugs and sliding bolts.

Twenty-third. The arrangement of an elevated flat part between two inclines arranged in reverse order.

Twenty-fourth. Radially sliding keys or bolts in combination with a retaining socket in one part and a locking space or shoulder in another of two parts of a capstan or windlass, to be connected or disconnected as required.

Twenty-fifth. A roller or sheave arranged with its axis at an angle to guide the chain.

Twenty-sixth. The employment of conical or cylindrical rollers, arranged in combination with spindle or barrel of a capstan or windlass, to relieve the friction incident to the side or transverse thrust.

Twenty-seventh. The arrangement of rollers longitudinally between the shoulder of a barrel and that of the spindle or bed plate, to sustain and support the barrel endwise.

Twenty-eighth. The arrangement of sliding bolts in sockets on the fulcrum gears.

Twenty-ninth. A lifting and sustaining ring in combination with the bolts or locking mechanism of a capstan, and inclined lifter, arranged either on it or an auxiliary part.

Thirtieth. The employment of an elastic or spring element interposed between the part bearing the pawl pockets and the fixed portion of the bed plate.

Thirty-first. The use of inclines for automatically lifting the fulcrum gear.

Thirty-second. Locking or clutching the centre or first moving gear of a capstan to the lever head automatically by interlocking lugs formed on each.

Thirty-third. The arrangement of a concentric, circular, or annular flange or rib, or flanges or ribs, between the spindle or hub and the rim or periphery of the bed plate of a capstan or windlass.

Thirty-fourth. The arrangement of a friction wheel between the two barrels of a capstan or windlass, with provision for connecting or disconnecting it to or from one or both at pleasure.

Thirty-fifth. The application of the differential windlass to the friction mechanism of a capstan or windlass.

Thirty-sixth. The employment of a combined bearing and brake or friction shoe in the friction mechanism of a capstan or windlass.

Thirty-seventh. The employment of chain lugs spanning the groove in the chain wheel and made adjustable radially in sockets at the bottom and extending up the sides of the groove between the two cheeks of the chain wheel.

Thirty-eighth. The employment of keys at the back of said lugs, either with or without the circular form.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, October 24.—N° 3252.

BURN, Robert Scott, and **EYLAND,** Edward Samuel.—(*Provisional protection only.*)—"Improvements in the construction of conservatories, glasshouses, and structures in which capabilities of contraction and expansion may be desired."

Expanding and contracting structures are made by means of removable and shifting bearers, moveable frames, and sashes, whereby parts of such structures may be readily opened and closed for ventilation or otherwise, or their size increased or diminished.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 24.—N° 3253.

DAVIS, Charles William.—(*Provisional protection only.*)—"Improvements in the manufacture of paper collars, cuffs, and similar articles."

This invention consists in passing the paper through a pair of cylinders, on one of which the pattern of linen is engraved or embossed, so that the said paper shall receive the impression of the said pattern and be afterward applied to the manufacture of the above articles.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 24.—N° 3254.

NURSE, George.—"Improvements in apparatus employed in connection with the coating of metals."

This relates to the hot air chambers now generally employed instead of grease or grease pots in the finishing process in coating metals with tin or other metal or alloy. The apparatus is constructed in the form of a circular pot with a frame or turntable made to rotate therein. This frame has removable partitions to hold the coated plates. The drippings fall upon a bonnet and run into an annular space in the chamber. Flues are arranged between the cover of the hot chamber and an upper cover.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 24.—N° 3255.

WIMBRIDGE, Edward.—" Improvements in preparing or manufacturing blocks for surface printing."

The design is drawn on metal or other surface in ink containing gum; the surface is then covered with Brunswick black and afterwards washed, whereby the parts composing the design become bare.

Acid is then applied to eat out the design to the required depth. A cast is then taken in metal which will bear the design in relief; this design is covered with Brunswick black, and acid is then applied to the parts not forming the design.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 24.—N° 3256.

GIRAUD, André.—" Improvements in separating silver from argentiferous lead, in purifying lead, and in " apparatus for the same."

The invention consists of the treatment with appliances described in the Specification for separating silver from argentiferous lead more promptly, more economically, and more perfectly; and to purify in a more efficacious manner lead destined for different uses than by any process heretofore known.

The features of novelty are the combination of an alloy with argentiferous lead by means of effective appliances and treatment indicated, which absorbs the silver and permits more complete and economical separation than by the usual Pattinson process.

The purification of lead deprived of silver by the means and appliances described.

The treatment by the means and appliances described of the rich litharge or dross for reducing or removing the alloys or impurities combined with the precious metal.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 24.—N° 3257.

REID, William.—" Improvements in trucks or wagons for the conveyance of cattle on railways, and in " apparatus or means to be employed for feeding and watering the cattle during the journey, and for " ventilating the trucks or wagons."

The feature of novelty which constitutes this invention is the construction of wagons with feeding and watering troughs and hay racks; also the application of feeding and watering troughs and racks placed upon supports at stations or other convenient position, and raised to sufficient height to enable the cattle to feed and drink therefrom while in the railway wagons.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 24.—N° 3258.

JAMES, William George.—(*Provisional protection only.*)—" An improved mode of and apparatus for " propelling ships or vessels and land carriages."

Propelling by the action of atmospheric pressure upon pistons which are fitted in a vacuum chamber, and which force forwards a driving rod or pusher, such pusher taking its fulcrum or bearing against a part of the vessel or carriage to be propelled, and which at the same time carries the propelling apparatus along with it. Provision is made for counteracting the back pressure by the use of two lateral counteracting pistons in connection with a piston in the front of the vacuum chamber.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 24.—N° 3259.

CLARK, Samuel.—(*Partly a communication from Felix Figon.*)—" Improvements in machinery or apparatus for cleaning and decorticating cotton."

Cleaning and decoricating cotton so as to prepare it for the "gin" by the combined action of flat and cylindrical screens within which latter revolve helical blades; also separating the cotton from the pods by the action of a revolving spiked cylinder and stationary spiked concave. One of the cylindrical screens is made to expand more or less for the ready removal of foreign bodies adhering between the wires.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 24.—N° 3260.

NEWTON, Henry Edward.—(*A communication from Samuel Williston, James Sutherland, and Joseph Winslow Winslow.*)—" Improvements in steam pumps."

The pump cylinder is open at both ends, and is enclosed in a case or envelope which is divided at the middle into two compartments. The water supply pipe and also the discharge valve are each provided with a set of clack valves communicating with the two compartments of the casing.

[Printed 8*d*. Drawing.]

A.D. 1868, October 24.—Nº 3261.

MAYHEW, Henry.—"An improved button fastening."

This invention consists in looping a strip of metal or other pliable material pointed at each end over the shank or bar of a button, the two ends of the loop coming together so as to form as it were but one point.

The button thus furnished is fastened on to any article by pushing the pointed ends of the loop through the material to which it is to be attached, then separating the two arms of the loop, bending them back on to the back of the material and there compressing them.

The strip of metal or other material is in some cases soldered or otherwise attached to the under side of a button without bar or shank, being previously or subsequently looped. The application is the same as the preceding but the button is more rigid.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 24.—Nº 3262.

GEDGE, William Edward.—(*A communication from Joseph Mathieu Cheuses and Edouard Nicolas Popard.*)—(*Provisional protection only.*)—"An improved glove fastening."

This improved glove fastening is composed of an endless band or cord running freely in a loop or eyelet on one side of the wrist-opening of a glove and carrying a catch fixed on one of its sides and running on the other, which passes through it, the double band finally traversing an eyelet hole on the opposite side of the glove. On pulling the loose end of the doubled band the catch assumes a position which permits its passage through the eyelet hole, and when released places itself obliquely across it; a pull on one side of the doubled band brings the catch closer to the point where the band is attached to the glove and tightens this latter round the wrist of the wearer, a pull on the opposite side of the band drawing the catch further from this point and loosening the glove at the wrist.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 24.—Nº 3263.

KIEFFER, Joseph Louis.—(*Provisional protection only.*)—"Improvements in sewing machines."

There is a notch or slot in the cylinder or cam which drives the shuttle, so arranged that the shuttle starts to enter the loop as soon as the needle has formed it, and returns before the stitch is tightened up. The shuttle presents the thread to sew the edge of the holes; the slot or notch in the cylinder or cam feeding the thread. Two levers are coupled together by a square roller to obtain uniform motion for the presser foot frame. A moveable plate covers the shuttle in its slide plate. A screw regulates the to and fro motion, its path being limited by a cam. By this screw (when using this double lever and the parts connected therewith) a plain stitch and other stitches may be made instead of the button hole stitch, the tension of the thread being regulated accordingly. A spring shaft is used to work an appliance which keeps the button or other hole open for the needle to pass. When the fabric is to be shifted a turning or "compass" lever is used, consisting of a lever or arm connected and working with the presser foot; it describes an arc at its end of longer radius than the path of the foot; it is toothed or serrated so as to move and turn the fabric. An arrangement of two needles may be employed, the shuttle driver being worked by an excentric path in a curved piece acting through connecting rods. The arrangements may be mounted in the frame of a single needle machine, the shuttle driver acting horizontally, and the button holes may be thus stitched at both edges at once.

The invention will be best understood by describing its application to a button hole machine. According to the arrangements, the inventor gives the thread sufficient tension for causing the needle to enter first into the button hole and then into the fabric, and to and fro motion is imparted to the fabric, and it is fed forward at each stroke of the needle the required interval. In the cylinder or cam which drives the shuttle is a notch or slot so disposed as to cause the shuttle to return before the stitch is tightened over the edge of the material between the two cross stitches, and sufficient thread is provided for tightening the stitches at the edges of the hole, the needle supplying thread for working continuously round the hole.

In the cam or eccentric of the needle carrier is a groove of rectangular section and equidistant from the edge of the inner opening. In this groove works a cylindrical roller connected with the needle carrier by its axis. A cylinder or cam actuates the shuttle and has a groove of rectangular section equidistant from the edge of the opening of the cylinder or cam. In this groove revolves a roller attached to the arm or bracket and communicating its oscillating motion by a connecting rod to the shuttle which it moves forward and backward at given intervals. The needle carrier is fitted by a dovetail in a vertical guideway. The bobbin carrier is a rod sunk in the frame. On the head of the machine an axis is screwed to an arm and furnished with two concave washers, between which the thread slides; one washe is pressed against the other by a spring held by a nut, by which tension and motion are given to the thread. The thread is kept between the washers by a guide stop. To give the needle thread sufficient tension to draw back the shuttle thread on the edge of the fabric there sometimes is employed a guide piece, through which the thread passes freely outside the thread tension piece; the tension of the thread is thereby regulated and breakage obviated. It is formed with smooth holes, through which the thread passes and brings back the knot from the hole and edge and forms the pearl heading. The bobbin thread passes from the needle between the two washers to the thread carrier and through holes, whence it rises into a ring on the moveable guide and through a plate on the needle carrier, and thence into the needle, thus stretching the thread, but yet giving to it necessary play to follow the needle in its movements. To allow the shuttle to pass through the loop below the fabric the moveable guide is made to follow the motions of the needle, and permit it to relax sufficiently when the shuttle passes into the loop, being lowered proportionately to the strain of the thread. A horizontal rod on the needle carrier raises it from below. A slide block is used to give to and fro motion. The shuttle driver is united to the cam or cylinder by a connecting rod and arm. The shuttle driver has two claws to receive the shuttle and give it reciprocating motion sufficient to yield to the movements of the thread. The foot has a spring which tends to press it down, and against an arm on the spring a cam acts. This spring is fixed to the frame and is adjusted by a screw. A cam or double eccentric is secured to the cam on the cross shaft and screws it against the shaft. At the side of the cam a stud tends to raise the spring at given intervals by a piece which abuts against the double cam. The other part causes the foot to advance when the needle leaves the material which is drawn in the required direction. The feed and presser foot works in a slide block; a spring keeps it against the cam and causes it to move. The spring acts on the foot, and its curve raises the piece till the pressure of the spring ceases to act on the foot; but when the foot rises a rod presses it forward the required distance. This rod is on an axis on the plate, and is fixed by a nut having a roller which presses on the double excentric on the motion shaft, and when thus pressed upon the spring it is counterbalanced. In the double cam is a shoulder which causes the roller to cease pressing on the foot and allows it to be acted on by the spring. On the foot is a roller on a screwed axis, so that the foot when rising engages in the fabric and slides in the square roller with a slight friction, the roller allowing it to describe the required path. A claw is screwed to the frame of the foot, against which the screw of the regulator abuts. The slide block of the foot is on a frame, which works by a dovetail fitting in a slide block. The frame is connected with an arm which acts by means of a roller on a cam. The foot has an enlarged portion below the slide block, through which a screw passes to regulate or lengthen the stitch. It presses against the claw fixed to the foot frame. A plate on which the foot presses on the material covers the shuttle and follows the motion of the foot. To communicate such motion a knee joint or double or jointed lever is connected by a roller, one end being attached to one lever and the other engaging in a square hole in the other, hence working the foot frame and the shuttle plate.

The arm of the levers abuts on the foot frame, and is connected with its motions by a spring which presses on one of the levers; the roller being fixed to the arm against the cam, play is given by a screw, against which one of the levers abuts and thus regulates the breadth of the stitch.

Wheels communicate to and fro motion, one wheel is on the driving shaft and all parts put in motion by the driving pulley do double work, the driving shaft only turning once.

To keep the button hole open a perforated frame is used, in which a shaft with two studs slides, one stud works in a slot so that when engaged the shaft only moves down and presents the requisite parts to the needle; but when those parts are not required the shaft is raised and the stud ceases to be engaged. The other stud is on the shaft, and a spring allows the parts to act when presented to the needle and presses the shaft down. An elliptical boss on the shaft has an aperture which receives certain appliances; a screw acts on a slot opener fixed in the boss and adjusted by the shaft so as to be presented in front of the needle when in the button hole.

The piece or frame in front of the foot frame follows all its motions, and when the slot opener is in the hole it opens it and renders the work accurate. One stitch enters the fabric and the other the hole; a space is formed for the needle to pass. A lever describing an arc is used for holes and eyelets, &c.; it carries a stud of the size of the hole or eyelet; it carries also a spring stud. This spring works in the second stud on the rod which passes through the elliptical boss. It is flat at one end, and has a slot for the passage of the stud or axis of the lever and allows it to move the required interval between two stitches.

A spring acts on the plate, which passes through the elliptical boss, forcing the stud to rise when released. In the lever is an aperture, at its end are teeth and in the centre a stud. The studs and lever being placed in position (that is, the stud being in the hole and the lever beyond the foot in a groove therein, a stud on the lever entering therein), when the foot rises and the lever follows it (by the tension of the spring), and the slot in the plate which traverses the boss, the fabric is acted on by the lever which forces it to move the stud; the lever not being held by the stud is engaged by the foot (but it extends to give a double motion to the foot when used for button holes). For overcasting, a stitch is made by the to and fro motion, the tension being regulated to form the stitches in the fabric. For plain sewing, the knee piece and screw are used, closing the latter in such manner as to prevent the roller on the arm from acting. In the knitting stitch the screw is regulated to form a zig-zag, the tension of the thread being regulated to make the stitch at each side where the needle enters. For double button hole stitch wherein the ends are to be fastened the two sides of the button hole are stitched at once. The needle carrier holds two needles, and the slide two shuttles. The slide block is placed under the plate of the frame. The arm of the shuttle driver is so placed as to allow it to move to and fro horizontally.

To drive this shuttle carrier the inventor employs a rod actuated by a lever working partially in a guideway and fixed to a rod which is connected with a lever and carries a roller taking into a groove in a lever on the feed plate, so that the lever which actuates the rod causes the latter lever to work and transmit motion to an eccentric path in a curved piece engaged by a roller on the shuttle driver, and as the slide advances it moves the shuttle carrier roller when the lever permits.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 24.—Nº 3264.

RIPPINGILLE, Edward Alexander.—(*Provisional protection only.*)—" Improvements in means or " apparatus employed when obtaining motive power, parts of which improvements are also applicable to " other purposes."

The invention consists in means or apparatus employed when obtaining motive power, parts of which are also applicable to other purposes, and relates, firstly, to combinations and arrangements of parts whereby the products of combustion in addition to being employed to raise steam are ultimately mixed with such steam and employed in any suitable manner to obtain motive power.

The direct products of combustion are caused to enter a chamber forming part of or in close connection with a chamber in which a number of plates and troughs are arranged in such manner that water which is allowed to enter at the top of such chamber in suitable quantities is caused to fall on to the uppermost plate or trough, from which it drops into the troughs or plates immediately below, and when such trough or troughs are filled with water begins to fall on to the plate next below, and thence into the next trough, and so on until it arrives at the lowermost trough, when it is allowed to fall through suitable overflow channels to the bottom of the chamber, where it is maintained at a given level, there being suitable means provided to allow the water to flow off when it has exceeded a certain level.

The products of combustion are caused to pass through zig-zag passages formed by the plates and troughs so as to give off such an amount of the heat contained therein as to reduce the temperature thereof to a safe working point, and so to raise a certain amount of steam which mixes therewith and thereby provides a moist vapor to be used as the motive power to be employed in any well known manner.

According to one arrangement coal gas is the fuel employed, and it is preferred to mix about one volume of gas with about two to four volumes of air, which are pumped into a suitable receiver working in liquid as an ordinary gasometer.

Or two receivers separate from each other may be employed, into one of which a mixture of gas and air is pumped, and into the other pure air.

The gas burner employed, and which forms part of the invention, is constructed so as to admit only the amount of air required for combustion and at the same time to prevent the circulation around the flame of any unconsumed air. To effect this two chambers are employed, one placed above the other. From one chamber a mixture of gas and air is conveyed by small round or flattened tubes up through the upper chamber, in the cover or top of which are holes in position to allow the tubes to come in the centre thereof, and terminate at the same height, thereby forming an annular space around each jet of gas or gas and air mixed for the admission of air thereto, pure air being admitted or forced into such upper chamber for this purpose.

The burner above described may be employed with slight modifications to generate steam in other descriptions of steam generators or for domestic or other purposes.

In some cases a ring or other burner applied outside the vaporizing chamber is employed to assist in raising it to and maintaining it at the desired temperature.

The mode in which to light the gas or mixture of gas and air is by means of a tube within the vaporizer, the lower end of which is bell mouthed and terminates immediately over the burner; the sides of this tube are perforated, and the top terminates in the crown of the vaporizer, and is provided with a valve or plug which may be opened and closed when required.

When it is desired to light the gas or mixture of gas and air the upper end of the tube is opened and the gas is turned on. The gas then rises up such tube and is lighted at the top thereof; the flame then descends to the burner, and when properly lighted the top of the tube is securely closed; the heated products of combustion then rise into the tube and pass out therefrom through the perforations therein, and become diffused throughout the vaporizing chamber.

The invention also relates to a means for shutting off the gas when there is an excess of pressure in a steam boiler or when the water has fallen too low. For this purpose a float or body of about the same gravity as the water employed, which is placed within the boiler or in a chamber communicating therewith, in such a position that when the water is too low the float or body is unsupported thereby, and its weight acting upon an expansion plate or tube actuates a valve or cock to shut off the gas.

When employing coal as the fuel a suitable close furnace is employed, through which air is forced in suitable quantities to support combustion, and such furnace is lined with fire brick as usual.

In connection with such close furnace a feeding apparatus is employed, consisting of a screw working in a tube to which a hopper is connected, and the fuel is supplied in regulated quantities to the fire by turning the screw which feeds the coal forwards from the hopper. A suitable cover is connected to the hopper so as to prevent the passage of vapor or the products of combustion therethrough, and the axis of the screw passes through a stuffing box for the like purpose.

A suitable aperture, through which the fire may be readily lighted, is provided and raked when required. To this aperture a tube is connected in which a suitable seat is fixed, and a valve is employed capable of being screwed down upon such seat when it is desired to close the aperture, but which may be readily unscrewed from its seat and turned down out of the way when the fire is being lighted or raked. To the tube in which the valve seat is fixed, and beyond such valve seat, another tube is connected branching off therefrom and passing to the flue, so that when the attendant is lighting or raking the fire the products of combustion therefrom may pass off by the last named tube to the flue, thereby avoiding the necessity for a second opening for such purpose.

In connection with the various arrangements herein described a bar is employed which is fixed at one end to the supply pipe of the engine, and at the other carries a valve which when the temperature of the steam and products of combustion is at a proper working point rests upon a suitable seat, but when the temperature rises to a higher degree than is considered safe the tube by its expansion draws the valve away from its seat and thereby gives notice to the attendant.

For marine engines the troughs in the evaporating chamber are hung upon suitable axes or universal joints, and where salt water is employed I pass an excess of such water through the evaporating chamber.

The invention also relates to an improved piston. For this purpose a cut ring or rings are employed for the wearing surface of the piston, the inner faces of such rings being inclined and bearing against the inclined face of another ring, which may be cut if desired in order to impart some degree of elasticity thereto. This last ring is acted upon by screws, so that as wear takes place it may be moved in the direction of its axis and so cause its inclined face to bear against the inclined faces of the outer rings, and thereby force them out to fit the cylinder.

If desired suitable caps may be applied over the heads of the screws so as to prevent the passage of steam through the face of the piston at those parts. And in order to provide means for adjustment to the edges of the outer rings as wear takes place a slight incline is formed on the edge of one of such rings, and a corresponding incline on the end of the piston.

The invention also consists of an improved slide valve whereby facility is afforded for cutting off at any portion of the stroke previously determined upon. For this purpose the steam ports or passages are formed in the seat inclined at their outer or leading edges, and the valve is shaped to correspond. Motion is given to the valve for a certain distance in the direction of its length, and then when it is desired to "cut off" the valve is caused suddenly to travel sideways so as to completely cover the steam port for the time being admitting steam to the cylinder.

If desired the working faces of the valve and valve seat may be curved to the arc of a circle, and the required sideway motion may be given thereto by the valve spindle, which also gives the to and fro motion thereto.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 24.—N° 3265.

SILVESTER, JOHN.—(*Provisional protection only.*)—" Improvements in pressure or steam gauges."

The invention refers to Bourdon's pressure or steam gauges, and consists in transmitting the motion of the ends of the circular tube into which the steam or air is introduced in the following manner:—On each end of the tube an arm is fixed, the two arms overlapping each other. The index finger is connected by a pin or centre passing through its bush to one of the arms, and to the other arm by a pin thereon engaging in a radial slot on the under side of the said bush. By the pressure of the steam or air within the tube its ends are separated and a rotatory motion thereby produced in the index finger, which traversing a graduated dial indicates thereon the pressure of the steam or air. The centre on which the index finger turns may be fixed instead of being capable of rotation. In this case the index finger only moves through one half the range under any given pressure.

[Printed, *4d.* No Drawings.]

A.D. 1868, October 24.—N° 3266.

DAWES, William.—(*Provisional protection only.*)—"An improved pulley block."

This invention consists in the application of the "tangent screw" to hand pulley blocks, and of an arrangement in the larger sized blocks for placing one, two, or more hand-chains and pulleys at some distance from the main-chain and pulley to obtain greater convenience, safety, and power, and thus obtain the advantages of a portable "hoist."

[Printed, *4d.* No Drawings.]

A.D. 1868, October 26.—N° 3267.

CRANE, Patrick Moir.—"An improved compound or size to be used in sizing and dressing cotton yarns "or cotton warps."

These improvements refer to and are intended to combine the use of paraffine with other materials for sizing and dressing cotton yarns or cotton warps.

[Printed, *4d.* No Drawings.]

A.D. 1868, October 26.—N° 3268.

HEASLER, William.—(*Provisional protection only.*)—"Improvements in machinery for coating wire "with india-rubber, gutta percha, and other materials for telegraphic and other purposes."

The machinery constructed according to this invention causes wire to be drawn from a drum, passed through a hollow spindle, then coated with an insulated material, or it may be for some purposes a non-insulating material, and after being coated passed through another hollow spindle and round another drum, which while revolving with its frame also rotates on its own axis, and in this manner imparts a rotary motion to the wire, and at the same time a drawing action to draw it on the drum. The drawing off and taking up drums revolve at equal speed.

[Printed, *4d.* No Drawings.]

A.D. 1868, October 26.—N° 3269.

NICOLL, Benjamin.—"An improved plastic composition suitable for ornamenting walls, floors, roofs, "and ceilings of buildings, and for the manufacture of mantelpieces, pillars, pilasters, and other like parts "of buildings."

This invention consists in the application of a species of scagliola to the purposes named in the title, such scagliola being composed of chalk, ordinary cement, and coloring matter if desired, according to taste. The surface when set and smoothed is hardened by a wash of silicate of soda, and may be ornamented by gilding or by inlaying other colored cements or plasters therein or otherwise.

[Printed, *4d.* No Drawings.]

A.D. 1868, October 26.—N° 3270.

HARRISON, Charles, and **WILSON**, Robert.—(*Provisional protection only.*)—"New (or improved) "apparatus for indicating a rise or fall of temperature for fire alarm and other purposes."

The features of novelty in this invention consist in the peculiar application of a thermometer, spirit-level, and series of levers for the various purposes described.

[Printed, *4d.* No Drawings.]

A.D. 1868, October 26.—N° 3271.

LOADER, John, and **CHILD**, William Henry.—(*Provisional protection only.*)—"Improvements in "rotary engines."

A central shaft in a fixed cylinder has a crank throw, and the crank pin has a disc fitted thereon. This disc revolves against the inside of the cylinder. A radial or other piston or stop works through a slot in the cylinder; its face works through a stuffing box, and its inside edge is kept against the revolving disc by a spring or otherwise. The movement of the disc is epicycloidal.

[Printed, *4d.* No Drawings.]

A.D. 1868, October 26.—N° 3272.

LYTTLE, William Alexander.—(*Provisional protection only.*)—" Improvements in electro-tel " instruments."

Firstly. The limitation of electrical currents used in step by step telegraphs, by employing a " sto with pins spirally arranged and a straight row of keys.

Secondly. Providing a straight flanched bar, the upper edge of which engages by a spring or w a notch in the end of any key which may be depressed, but which is pressed back and liberates th the depression of any other key.

Thirdly. A clockwork arrangement for propelling this stop-drum. The drum moved thus contact lever, the numerically regulated play of which is caused by a small eccentric pinion dr larger wheel attached to the spindle of the drum.

Fourthly. A peculiar application of these arrangements to the printing of a message in com One current only is used to advance the type disc, whilst the opposite current effects the printi printing is effected on paper placed round a roller which advances on its axis the space of one li revolution. There is a peculiar arrangement of gearing for spacing letters and words.

Fifthly. A plan of working these arrangements by transmitting on the line only the secondary an induction coil, with or without an arrangement for propelling the stop-drum by an electro ratchet and without the aid of any other "maintaining power."

Sixthly. The substitution in these arrangements of a peculiar stop dial for the stop drum.

Seventhly. The employment of an universal switch for readily changing the earth and other c of the instruments. A similar arrangement of making and breaking connexion is also applied form of testing box or board.

[Printed, 6*d*. No Drawings.]

A.D. 1868, October 26.—N° 3273.

GEDGE, William Edward.—(*A communication from Joseph Rousselot.*)—" An improved gas bu

This invention consists in the novel shape of the burner and in its receiving gas through t and air from beneath or at the sides, the result being that the gas arrives at the burning orific pressure the flame is no longer subject to wavering and the gas is entirely consumed.

[Printed, 8*d*. Drawings.]

A.D. 1868, October 26.—N° 3274.

BOULTON, William.—" Improvements in the method of and machinery or apparatus for manu " oval and irregular shaped articles of pottery."

This invention consists in giving an eccentric or irregular motion to articles made by the " ji " whirler," which may be performed or carried into practical effect in the following manner :—

I fix two oval or irregular pulleys or cams on the "jigger" or "whirler" spindle, the same to be in contact with a round pulley by a spring or balance weight, the carrier of the said round pull stationary, the neck and toe blocks of the jigger spindle being made to slide give a motion to the according to the shape of the pulley on the said spindle.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 26.—N° 3275.

JONES, John, and BIDDER, Samuel Parker, the younger.—(*Provisional protection only.*)—" Im " ments in the means and apparatus for breaking-down coal, stone, and other minerals."

This invention consists in breaking down coal, &c. by hydraulic or screw power combined with a w action. For this purpose wedges are forced by a hydraulic press or a screw spindle between two blocks situated between two tension rods in the hole cut in the coal, &c., so that the blocks in pr against the sides of the hole effect the breaking down of the coal. A " clearance box is employ allow of the requisite motion of the wedges.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 26.—N° 3276.

SPEIGHT, Thomas, the elder, and FRANCE, William Henry.—" Improvements in wool com " machines."

The improvements consist in,—

Dispensing with the interior comb or combs and substituting in lieu thereof one or more barrel cupine combs or screw-gill combs, or endless card or pin belts; also a nipping instrument for holding the wool on the large circular comb.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 26.—N° 3277.

PRIESTLEY, THOMAS, and **DEIGHTON**, WILLIAM.—"Improvements in looms for weaving."

The novelty consists in,—

Having slot holes in the shuttle boxes and pickers formed to slide therein, with T heads or projections; also using upright picking sticks worked by horizontal shafts actuated by tappets fixed on the loom.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 26.—N° 3278.

MORT, WILLIAM.—(*A communication from Thomas Sutcliffe Mort and Eugene Dominique Nicolle.*)—"An "improved method of and apparatus for obtaining reduction of temperature by the expansion of air or "other permanent gases in special connection with the preservation of articles of food, the manufacture "of ice, cooling of rooms, and liquids."

This Complete Specification describes an improved mechanical combination for obtaining cold by an application of the well known natural law, that reduction of the volume of any permanent gas and simultaneous removal of the sensible heat caused thereby results upon expansion in a capacity for or power of taking heat from the bodies with which it comes in contact.

[Printed, 2*s.* 2*d.* Drawings.]

A.D. 1868, October 26.—N° 3279.

RANSOME, FREDERICK.—"Improvements in preserving and hardening stone, brick, cement, and other "building materials."

This Provisional Specification describes applying in succession to the stone or material treated a solution of lime or baryta or other similar substance and a solution of silica. Molasses or sugar may be added to obtain a more concentrated solution.

Also in applying in succession a solution of phosphate of lime, a solution of baryta, strontia, or lime, and a solution of silica. Solutions of alumina and metallic salts may be substituted for phosphate of lime.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 26.—N° 3280.

CLARK, ALEXANDER MELVILLE.—(*A communication from Auguste Martel-Delespierre and Henri Rousseau.*) —"Improvements in the means of and machinery for scouring wool."

The machinery to be used in conjunction with plaster in powder for removing the grease from wool consists of a number of hollow drums, in which the wool and plaster are introduced in succession and treated by means of beaters rotating at a high rate of speed. These beaters consist of radiating arms, which pass between teeth fixed in the drums for the purpose of separating the filaments, and after being thus treated the wool falls on to a screen in motion for separating the plaster used in the process of scouring.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, October 27.—N° 3281.

GEDGE, WILLIAM EDWARD.—(*A communication from Charles Louis Weisgerber and Eusèbe Schilt.*)— (*Provisional protection only.*)—"Improvements in the manufacture and application of salt stones or lumps "of salt for consumption by cattle, sheep, and other animals."

This invention consists in the manufacture of salt-stones, cakes, or "salignons," intended for the consumption of cattle, horses, and sheep, which derive great benefit from their use. They are made by breaking gemma or mineral salt crystals into pieces small enough to pass between two cylinders, which reduce them to powder. A certain quantity of water is then mixed with this pulverized salt, and it is placed in wooden moulds, where all the molecules are again reunited under powerful pressure. The drying then takes place, and by the rapid evaporation of the water the salt recrystallizes and thereby becomes almost as hard as before the operation.

The salt-stone, cake, or "salignon" thus made is fixed in a small wooden box, which is nailed between the rack and the manger horizontally for horned cattle and vertically for horses.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 27.—N° 3282.

SMITH, Ambrose Hudd.—" Improvements in the method of and apparatus for warming and heating " churches, chapels, and other buildings."

The Provisional Specification describes an apparatus for warming churches and other public buildings, and consists of a brick chamber formed beneath the floor with a grating. Underneath the chamber is introduced an air flue covered with an iron grating. A current of air is introduced, which is brought to act upon a ring gas burner. By means of a spanner the amount of heat is regulated. Beneath this ring burner is a small cistern filled with water, above which is a reservoir containing pummice stone, through which the steam rises and forms a vapour which moistens the atmosphere contained in the reservoir.

[Printed, 1*s*. Drawings.]

A.D. 1868, October 27.—N° 3283.

ZANNI, Geminiano.—" Improvements in electro-magnetic telegraph printing instruments."

Hitherto in electro magnetic telegraph printing apparatus magnetic coils have been employed in connection with clockwork driven by springs or by weights. By this invention it is proposed to work electro magnetic telegraph printing instruments by means of electro magnetic coils without the aid of clockwork.

The electro magnetic coils are such as in general use in electro magnetic bell apparatus, and work in connection with a battery or the earth or a compound magnet. Two sets of such magnetic coils are employed, the one set for giving the requisite motion to the type wheel, and the other set to lock the type wheel and work the printing block or presser, which presses the strip of paper upon the type and also causes the strip to move forward after each successive printing, when the locking action of the type wheel is allowed to fall back out of action and again allow of the progression of the type wheel.

[Printed, 1*s*. Drawing.]

A.D. 1868, October 27.—N° 3284.

HICKLING, William Edwin.—(*Provisional protection only.*)—" Improved machinery for washing casks " and such like articles."

According to this invention a shaft is set horizontally in standards, and is provided at a point midway between them, with two arms opposite each other. These arms carry two cages or frames in which the casks are held, and are free to revolve with the shaft and to rotate on their own axes by means of a fixed bevel pinion, through which the shaft passes, and by a bevel wheel fixed to the bottom of each cage and gearing with the fixed bevel pinion. The casks are supplied with water, and either a piece of chain or small stones are added to assist the operation of washing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 27.—N° 3285.

LITTLE, John.—(*Provisional protection only.*)—" Improvements in glass furnaces."

This invention consists in introducing air inside the furnace for the thorough combustion of the fuel and its gaseous products, such air being previously heated by passing through flues constructed in the siege or floor and sides of the furnace, and which flues are heated simply by conduction through the siege or floor and sides of the furnace itself.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 27.—N° 3286.

O'HEA, John Bryan, and BULLEN, William.—" Improvements in breech-loading fire-arms and in " cartridges to be used therewith, which improvements are also applicable to breech-loading ordnance and " their cartridges."

This invention is intended to combine all the advantages of a metallic cased or metallic based cartridge with the economy and other facilities connected with the use of a paper cartridge. The invention is applicable to all breech loading fire arms wherein the cartridge is pushed forward into the chamber or breech of the barrel by means of a bolt, piston, or block swinging from the front or sliding in a line with the axis of the same, and having the needle or striker passing through the centre thereof, and may be said to consist broadly in attaching a cup similar to (and answering all the purposes of) the metallic base to the fore end of the said bolt and using a paper cartridge containing its own ignition, the base of the said paper cartridge being placed in the said cup or metallic base before the cartridge is pushed forward by the bolt.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 27.—N° 3287.

FAJEN, GUSTAV.—(*Provisional protection only.*)—" Improvements in ventilators or smoke exhausters " applicable to chimneys of dwelling-houses and other similar buildings."

This invention consists cheifly in the mode of construction and in the means of fixing the ventilators or smoke exhausters within the internal part of a chimney, flue, or other opening. The fan, screw, or worm, which from having glass bearings to rotate on, is releived from all friction, and by the atmospheric air passing up the chimney keeps the fan, screw, or worm in one continual motion, thereby ventilating and exhausting the smoke from the fire contained in the stove or grate.

The fan, screw, or worm, which is fitted to a box made of metal and regulated by a damper and register for indicating the speed of the fan and for the prevention of down drafts in dwelling house chimneys or other similar openings.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 27.—N° 3288.

YOUNG, WILLIAM DENOON.—" Improvements in making tiles or plates of iron, zinc, or other metal " sheets to be used for roofing and for iron houses and other structures."

The feature of novelty which constitutes this invention is,—

The formation of the tiles or plates with their edges bent over in the form of a hook, so that when in place they overlap each other and form a very secure joint.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 27.—N° 3289.

WALLACE, JAMES.—" Improvements in dental appliances."

The feature of novelty which constitutes this invention is,—

The employment of aluminium as a substitute for other metals or materials employed for connecting and fixing artificial teeth, and the cutting of a design on the plates in which the teeth are fixed, so as to secure a more rigid hold of the mouth or gum.

[Printed, 6*d.* Drawing.]

A.D. 1868, October 27.—N° 3290.

VAN HECKE, ENGLEBERT THÉOPHILE.—" Improvements in locomotive engines."

The novelty of this invention consists in placing in the smoke box of a locomotive engine a screen or partition so arranged as to compel the heat, smoke, and gases from the fuel to pass downwards nearly to the bottom of the smoke box before they pass out at the funnel instead of their passing directly from the tubes up the funnel as heretofore practised.

[Printed, 8*d.* Drawing.]

A.D. 1868, October 27.—N° 3291.

JOHNSON, JOHN.—" Improvements in apparatus applicable to window frames for raising or lowering " sashes and shutters."

This invention consists in passing suitable cords, ropes, bands, or chains from the sashes or shutters over guide pullies to a barrel or drum or barrels or drums situated above the head of the window frame behind the lining.

The barrels or drums are caused to rotate by cords or bands running through suitable guides and passing down the window frames in the manner of ordinary roller blind cords, such cords or bands being secured to and passing around large pullies or wheels attached to the barrels or drums for giving a certain amount of leverage, so that by pulling the cords or bands at the sides of the frames and thereby causing the large pullies, and with them the barrels or drums, to rotate the cords, ropes, bands, or chains attached to the sashes or shutters will be wound around the barrels or drums and the sashes or shutters consequently raised while on the barrels or drums being caused to rotate in a contrary direction so as to unwind the cords, ropes, bands, or chains, the sashes or shutters being released, will descend by reason of their own preponderance over the sash weights.

The cords or bands by which the barrels or drums are actuated may be kept tightly down the sides or linings of the window frames by adjustable pullies or buttons held in position by spring catches.

[Printed, 10*d.* Drawing.]

the bottom of the rail touching.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 28.—N° 3294.

SANDERS, Henry John.—(*Provisional protection only.*)—"Improved means or apparatus
" the flow or discharge of liquids from two or more vessels simultaneously."

The object of this invention is to draw or obtain beer, ale, porter, or other liquids from
vessels or barrels at the same time for the purpose of mixing them in any desirable proportions

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 28.—N° 3295.

MORAN, Joseph.—(*Provisional protection only.*)—"Improvements in the manufacture
" shoes."

This invention consists in an improved mode of attaching the soles to the upper leathers of
and shoes by forming a drill or channel of about one third its thickness in the sole near to the
drill or channel is of sufficient size to hold the heads of the rivets, the rivet holes being made
and the rivets driven and rivetted in the usual manner upon an iron last.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 28.—N° 3296.

SOUL, Matthew Augustus.—(*A communication from John Gregory.*)—"Improvements
" the permanent way of railways."

The chief features of novelty in this invention are, firstly, the construction of ribbed
materials with jaws for holding rails and recesses for receiving dogs which are kept in position
wood wedges binding and maintaining the whole together; and, secondly, a novel form of
uniting the ends of rails, the fish joints being made in two halves in such a way that
together by clamp or clip like pieces of wrought or cast iron.

[Printed, 1*s.* Drawing.]

A.D. 1868, October 28.—N° 3297.

BROOMAN, Clinton Edgcumbe.—(*A communication from S. A. Goodwin.*)—(*Provisional*
—"Improvements in the condensers of steam engines."

The object of this invention is to dispense with the air pump of condensing steam engines
the power expended in its working, reduce the cost of construction and repairs, and increase
the engine.

The invention consists in elevating the condenser above the water level to a point above that
weight of the atmosphere will support a column of water, and connecting it by means of a
hot well, thus forming a syphon crowned with the condenser, of which the first pipe is the

may either be made outside the half or parts of the moulds and covered by a metallic cover, strap, or plate, or made in or attached to the interior of the half or parts of the moulds, or in any other convenient way.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, October 28.—N° 3299.

DAWES, William.—(*Provisional protection only.*)—"Improvements in pianofortes."

The first part of this invention consists in a compensating "frame" for piano-fortes to prevent variation of "pitch" of instrument through variations of temperature in the atmosphere in which the instrument is placed. The patentee uses zinc or other extra expansive metal to obtain the necessary amount of compensation.

The second improvement consists in a double or compound "sound board" for increasing the tone of the instrument, this double soundboard, having a space of about one inch between the front and back boards, is fixed upon "ribs," "studs," or supports exactly coinciding in position with the sound board bridge of the instrument. The patentee also improves the upper notes of the piano by enlarging the sound-board locally round the upper end of the bridge.

The third improvement consists in a novel method of producing a prolonged or continuous tone in the piano by machinery which will produce a succession of extremely rapid blows or strokes upon or against the wires or upon additional wires placed at the back of the instrument; also an "octave coupler" with the latter.

Fourthly, a kind of "ad-libitum" arrangement which by dividing each key or by an elastic centre pad the player is enabled to prolong any note or notes at pleasure. And,—

Fifthly, the patentee applies a catch or check action to the lower or bass notes of the piano for about two octaves to prolong the tone of these notes and at the same time allow the free use of the "forte" pedal to the other or higher notes of the instrument without damping the notes to which this action or movement is applied.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 28.—N° 3300.

DONISTHORPE, George Edmund.—"Improvements in packing the pistons and other parts of steam "and other engines."

According to this Provisional Specification a flexible bag of a ring form (which may be protected by a flexible metal covering) is placed around a piston or a rod working in a gland. The bag is supplied from a reservoir with oil or liquid under pressure. Means for regulating the pressure of the oil or liquid are described.

Other modes of applying oil or liquid under pressure to pistons or glands are described.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 28.—N° 3301.

COW, Peter Brusey, and HILL, John.—"Improvements in the manufacture of tooth brushes and "other brushes."

According to this Provisional Specification tooth brushes and other brushes are formed by cementing or fixing spongy india rubber with either a smooth or roughened surface to various kinds of handles.

[Printed, 10*d*. Drawing.]

A.D. 1868, October 28.—N° 3302.

KELSON, Charles.—(*A communication from Charles Kimball Marshall.*)—(*Provisional protection only.*)—"Improvements in horse collars."

This Provisional Specification describes forming horse collars of a semi shell shaped form. Holes may be made in these collars to increase their lightness and elasticity.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 28.—N° 3303.

PROWETT, William.—(*Provisional protection only.*)—"Improvements in knitting machines."

This Provisional Specification describes a knitting machine in which the needles have an endway motion given to them, which takes their heads underneath a stationary presser bar and between blades which act like sinkers. The needles are moved in succession from side to side of the series. The machine is double acting, the needle slides having needles upon them on both sides of the machine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 28.—N° 3304.

TONGUE, John Garrett.—(*A communication from Jules Leblan.*)—" A new and improved combination, " application, and arrangement of apparatus for giving warning signals or otherwise indicating the presence " of fire or any undue increase or variation of temperature in apartments, buildings, vessels, mines, or other " places."

The object of this invention is so to combine, apply, and arrange apparatus as to give an immediate warning by an alarum or other suitable signal, or otherwise to indicate promptly the presence of fire or any dangerous or undue increase or variation of temperature in apartments, buildings, vessels, mines, or other places, and to give such warning, signal, or indication with promptitude, whatever may be the degree of temperature within a predetermined limit of the place in which the apparatus is placed prior to such sudden increase or variation of temperature; and, further, to give a prompt, continuous, and certain signal, alarum, or indication when the temperature of the place in which the apparatus is placed has risen beyond a certain predetermined limit.

The invention consists in the combination of two thermometers having an unequal sensitiveness, and so arranged as to permit the warning or signal apparatus to accommodate itself in an automatic manner to the normal variations of the temperature in which the apparatus is placed without such signal or warning apparatus being brought into action, the thermometers being so arranged that a warning signal or indication will always be given with promptitude, and consequently in an efficacious manner, every time the temperature changes suddenly from an accidental or other cause, such warning signal or indication being continuously maintained when the temperature of the place in which the apparatus is placed has risen above a certain predetermined limit.

The two thermometers employed, either or both of which may be liquid or metallic, are, according to this invention, so arranged that the one is very sensitive and indicates almost instantaneously the degree of temperature of the situation in which the apparatus is placed, the other thermometer taking a longer time to indicate a corresponding temperature, and so establish an equilibrium between the two thermometers, which are by preference so constructed as to travel over the same distance for each degree of heat indicated. The two thermometers are placed in connection with the two poles of an electric or galvanic pile or battery, the two thermometers being so arranged that during ordinary variations of temperature the electric circuit is incomplete; but should any sudden increase of temperature occur the sensitive thermometer operating more rapidly that the less sensitive one acts by means of suitably arranged contrivances to place the two thermometers in electric communication and so complete the electric circuit, which will then by any of the well known means set in motion warning signals, alarums, or other indicators, by which attention will at once be drawn to the sudden increase of temperature, and if desired to the part of any building, vessel, mine, or other place in which such sudden increase may occur. The two thermometers are also so combined and arranged that after the temperature of the place in which the apparatus may be placed has risen to or above a certain predetermined limit an electric communication between the two thermometers or otherwise between the two poles of an electric or galvanic pile or battery is established and continuously maintained, and by this means a continuous warning signal or other indication given so long as the temperature remains above the predetermined limit.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, October 29.—N° 3305.

BENSON, Martin.—(*A communication from John Richards.*)—" Improvements in shaft couplings."

The nature of this invention consists in constructing a shaft coupling with an internal split sleeve or tube to fit the ends of the shafting, with external conical ends, the larger diameter being in the centre and the smaller at the ends of said sleeve. Each end of the sleeve is fitted with a compressing or tightening shell, and furnished with means for screwing or drawing their inward ends together, which firmly presses the internal split sleeve to the shafting owing to its conical shaped ends. The internal split sleeve is constructed sufficiently thin and light in its cross section to be compressed concentrically to fit shafts of slight varying diameters, and in so constructing the outer or compressing shell that the strain will fall equally on each end, so connecting them that they will represent the continued strength of shaft through the coupled point.

[Printed, 8*d*. Drawing.]

A.D. 1868, October 29.—N° 3306.

DOBSON, Benjamin, and CLOUGH, James.—" Certain improvements in machinery for preparing " cotton and other fibrous substances."

This invention relates to the stop motions of drawing frames, and consists in the application of a balanced lever of an improved construction between the drawing rollers and the calender rollers, which deliver the sliver into a can or other receptacle. The balanced lever is held in position by the slivers, and the lower end passes through a slot in a vibrating rod; when a portion of the slivers is missing the lower end of the balanced lever is acted upon by the vibrating rod, and the driving strap is moved from the fast to the loose pulley in the usual manner.

[Printed, 10*d.* Drawing.]

A.D. 1868, October 29.—N° 3307.

MELDRUM, Robert.—(*Provisional protection only.*)—"Improvements in an apparatus for the utilization "of waste steam from steam cylinders for the increase of power."

The object of this invention is to provide an apparatus for the utilization of the waste steam which has done its work in the cylinder without condensing it with cold water. This apparatus consists of a chamber or series of chambers in communication with each other by proper openings, having fans which work in the chambers by the action of the waste steam thereon, such steam being obtained by suitable ducts belonging to the apparatus.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 29.—N° 3308.

BLANCHON, François Armand.—"Improvements in tops."

The invention relates to hollow tops, and the same consists in making use, for imparting a rotary motion to them, of the reacting effect exerted by a current of air acting in a manner similar to that of the steam in the apparatus called eolipyle, which current of air may be produced either by insufflation or by suction, and is caused to pass through an opening provided in the centre of the upper part of the top and through suitable openings provided in the periphery of this latter.

[Printed, 8*d.* Drawing.]

A.D. 1868, October 29.—N° 3309.

LIDDELL, William Hodgson.—"Improvements in treating all kinds of pig skins in the processes of "preparation, tanning, currying, enamelling, and japanning, and in utilizing the products."

This invention relates to the treating of pig skins by such processes as removes from them the natural hair and fatty matters they contain, and of artificially substituting instead such elastic bodies as shall not only fill up the pores before occupied by the bristles or hair and fat, but from their true elastic, flexible, and chemical character so prepare the skins to fit and finish as shall make them rank with other skins and like them capable of being manufactured into various kinds of leather, taking on all kinds of colours, enamelling, and japanning, consequently capable of being manufactured into all the kinds and varieties of leggings, bags, bandages, splints, veneers, ornaments, harness straps, and generally into all articles made of leather, whether by itself as solid leather in the portmanteau, or in combination with india rubber, as in fastening of leggings; in fact, in any form where any other leather can be used, as well as articles specially suited to pig skins.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 29.—N° 3310.

WHYTE, Quintin, and **WHYTE,** John.—"Improvements in looms for weaving."

This said invention substantially consists in new arrangements of mechanism for moving the compound shuttle boxes of power looms composed of two, three, or more boxes in the set and of the vertical acting class by a positive motion in both the up and down direction through a double armed and acting horizontal lever fulcrumed near its centre, and having one end directly connected to the lower end of the spear of the shuttle boxes, the weight of which is balanced by a weight or spring acting in the opposite direction on the lever. This shuttle box lever is pushed and set to its three positions to suit those of the boxes when in use in a line with the race by three steps of different heights on the lower ends of two pressers pendant by a stud or joint to the centre of two horizontal levers reciprocated vertically by a short connecting rod each revolution of the crank on the second motion shaft, to the pin of which it is directly attached at its lower end and a pin in one of the levers at the upper. These levers are so connected at their adjacent oscillating ends by toothed segments or a short link as to make the pressers, which are connected at their lower ends by a horizontal connecting rod, to reciprocate up and down equally and oscillate parallelly at their lower ends, each with their steps over the lateral stud in the opposite arms of the shifting and setting lever of the shuttle boxes at an equal distance from its central fulcrum.

A.D. 1868, October 29.—N° 3311.

SCOTT, WILLIAM.—(*Provisional protection only.*)—"Improvements in machinery or apparatus for drying "and cleansing wool or other fibrous substances."

The novelty consists in,—

The general form of the chamber and arrangement of the swift and roller, and in making the upper part of the chamber hollow and suitable to receive steam, hot water, or other heating media.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 29.—N° 3312.

ADAMS, JOSEPH, and **ADAMS,** WILLIAM.—"Improvements in the manufacture of bricks and tiles."

The novelty in this case consists in mixing or treating clay or loam with certain ingredients instead of ashes, and burning the same when formed into bricks and tiles without ashes in clamps.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 29.—N° 3313.

HEATON, JOHN.—"Improvements in the production of iron and steel."

My invention relates to improvements in the manufacture and production of iron and steel, and consists,—

1st. In the employment of the cinder or slag resulting from the balling of steel or of steely iron which has been obtained by the action of nitrate of soda or of nitrate of potash upon cast iron either in a converting vessel or apparatus, such as is described in the Specifications of Letters Patent granted to me, dated A.D. 1866 and N° 798, and A.D. 1867 and N° 1295, or in any other suitable furnace or apparatus.

This cinder or slag I employ either in what is known as the puddling process for the production of malleable iron or of steel from cast iron, or in the blast furnace for the purpose of improving the quality of cast or pig iron to be produced.

2nd. In the employment of the product obtained by heating together oxide of iron and carbonate of soda or caustic soda or mixtures of the same for the production of malleable iron or steel from cast iron in what is known as the puddling process, and also its employment in the blast furnace for the purpose of improving the quality of cast or pig iron to be produced.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 29.—N° 3314.

WALLWORK, HENRY.—"Improvements in taps or valves."

The invention relates principally to self closing valves or taps. The valve is a lifting one, having a ring of india rubber or other suitable material upon it to come against the seating; it is made with a peculiar formed head, and according to one modification with a hollow stem, the valve being partially an equilibrium valve, but shutting with the pressure of the water. The stem of the valve is lifted to open it by a lever handle passing through a cylindrical plug or by a shaft with lever projections, or by a lever acting on a sliding tube on the exterior of the body of the tap. It is also combined with a ball valve lever to form a ball valve tap.

[Printed, 8*d.* Drawing.]

A.D. 1868, October 29.—N° 3315.

OXLAND, ROBERT.—"Improvements in the treatment of ores and minerals for the extraction of tin."

According to this Provisional Specification grinding apparatus is employed in treating ores of tin in the raw and in the calcined states.

[Printed, 6*d.* Drawing.]

A.D. 1868, October 30.—N° 3316.

BROWN, WILLIAM.—"Improvements in machinery for rolling metals."

This invention refers to improvements on a former Patent, N° 2588, 1867, granted to the present applicant.

One part consists in the use of three or more sets of parallel rolls driven at different velocities instead of two sets only as described in the said Patent.

Another part consists in the use of one or more pairs of rolls in place of the top roll described in the said Patent for flattening the pile, billet, or ingot, before it is introduced into the strand or reducing rolls.

Another part consists in driving the strand or reducing rolls by placing a large toothed wheel on the shaft of the lower roll of the first pair with which a pinion on the shaft of the middle roll of the second set of rolls

A.D. 1868, October 30.—N° 3318.

COLLINS, William, junior.—"Improvements in separating and feeding or removing
" sheets from a pile, and in apparatus therefor."

In one modification of the improved apparatus a sucker is used consisting of a mouth pie
a pipe with a pump or its equivalent; and the improvement consists in making the holding
mouth piece uneven or indented so that air can enter to some extent even when the paper sh
the suction will draw it. The separating action may be assisted and intensified by causing
of air to blow against the edges of the sheets; or a brush or its equivalent may be made to
the edges of the sheets to facilitate their separation. The sucker lifts the edge of the sheet, an
blades or equivalent details enter above and below and closing on the sheet receive it from
move it away as required. Where the paper or other sheets are apt to cling together, blade
be arranged to enter above and below and to rub in different directions in order to separate t

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, October 30.—N° 3319.

WRIGHT, Josiah.—(*Provisional protection only.*)—" Improvements in portable printing
" presses and in appliances connected therewith."

This invention consists principally of an improved printing or embossing press which is w
of a lever with eccentric action on a piston, at the bottom of which is a pad of vulcanized
other suitable material. Beneath this piston is a metal bed, on the face of which are dove
receive the dies, which latter being made of a size to move freely therein may be changed
back of this bed (in a rack in which are cut diagonal slots) are placed one or more rollers of suit
on which is wound carbonized paper or other material of such color as may be desired, the s
the rollers to be at once changed and other colored rollers substituted. When the press is
bonized paper or other material is drawn over the face of the die. A gauge or slide is fixe
other suitable part of the press for the accurate adjustment of the paper or other article to
printed upon.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 30.—N° 3320.

ALLIX, George.—(*Provisional protection only.*)—" Improvements in apparatus for raising,
" disengaging ships' boats."

1. *Raising and lowering apparatus.* From the davit heads frames are suspended having
rotating spar which carries a barrel at each end to receive the hoisting and lowering chains
rotated by a train of wheels driven by a pulley which is worked by a rope or parbuckle. By h
rope the spar winds up the hoisting chains, and by leaving the rope free to wind on the pulley
the boat rotates the spar in the opposite direction. According to another arrangement a rot

the corresponding hooks from the davits; and by turning it in the other direction the hooks are released.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 30.—N° 3321.

SHARROCK, Samuel.—" Improvements in lamp posts."

This Provisional Specification describes employing taper tubes of sheet wrought iron bent round and rivetted together. Strengthening stays are fixed at any weak part of the post.

[Printed, 8*d.* Drawing.]

A.D. 1868, October 30.—N° 3322.

DANDO, William Elbert.—(*Provisional protection only.*)—" Improved mourning hats."

Instead of putting a band of cloth round an ordinary silk hat, as at present, I attach the cloth band direct to the body of the hat, thereby dispensing with that portion of the silk covering which would be covered by the cloth band, or I cover this portion of the body of the hat with some material inferior to that on the upper portion of the hat, thereby effecting a saving in the cost of the hat.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 30.—N° 3323.

IRVINE, Robert.—(*Provisional protection only.*)—" Improvements in the production of alcoholic " liquors."

This invention consists in utilising the refuse products containing starch which result from the process of brewing and distilling, by adding thereto water acidulated with sulphuric acid or such of its salts as have an acid reaction, the object being to convert the same into starch sugar or partly into starch sugar and partly into dextrine.

In order to effect the conversion of the starch present I boil these refuse products with the acid liquid for such time as may be required.

After the conversion has been effected the clear or brown liquid holding the " malt extract " in solution is drawn off, and the acid or acid salts employed for effecting the change of the starchy matters is separated or neutralized by means either of alkalies or of alkaline earths or their carbonates so as to obtain a neutral liquid which contains the " malt extract " in solution, and which is capable of fermentation in the usual way, and of subsequent distillation for the obtainment of the alcohol therefrom.

[Printed, 4*d.* No Drawings.]

A.D. 1868, October 31.—N° 3324.

BRÖNNER, Julius.—" An improved construction and application of shades to gas lights."

This invention consists in so constructing a shade that when applied to a gas light the jet burns at a certain regulated distance from a vertical or nearly vertical plane, the expansion of the flame being parallel therewith.

The effect of this construction and arrangement is that this flat vertical side of the shade becoming heated a perpendicular current of air is produced steadying the flame.

[Printed, 1*s.* Drawings.]

A.D. 1868, October 31.—N° 3325.

BATES, William Edwin, and **DODD,** Thomas.—" Certain improvements in machinery or apparatus for " cracking nuts."

This invention is intended to be applied principally for the purpose of cracking palm nuts, in order to remove the shell previously to submitting the kernels to the action of the press for extracting the oil, but it may also be used for the purpose of cracking any other kind of nuts that are required to be cracked in large quantities for any other purpose.

The invention consists principally in the use of a revolving fan producing a blast or current of air and throwing the nuts with a sufficient force against an iron or other target to crack or break the shells without injuring the kernels.

[Printed, 6*d.* Drawing.]

A.D. 1868, October 31.—N° 3326.

CLARK, Alexander Melville.—(*A communication from Jean Henri Cazal.*)—" Improvements in sewing " machines."

The invention consists in the application of electricity as a power for driving sewing machines. The power

porcelain or non-metallic ring and wooden peg a complete metallic insulation of the vessel is
the transmission of heat from the vessel to the handle wholly or nearly prevented.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 31.—N° 3328.

DICKINSON, Benjamin.—" Improvements in propelling and manœuvring ships and oth
" in the apparatus and means employed for such purposes."

Substituting for the ordinary arrangement of jet-pipes or water-emission openings as heret
employed on board of vessels or ships propelled by means of hydraulic jets a longitudinal tro
formed of plates and of suitable transverse section, either with or without a horizontal divis
having lateral openings or holes in the sides and angular openings or holes in the bottom or
through which holes the water is forced and discharged under pressure.

For the purpose of reversing the motion of the vessel, or going astern, or monœuvring, the fo
of the trough or channel may be pierced with holes made at a suitable angle.

[Printed, 1*s*. Drawing.]

A.D. 1868, October 31.—N° 3329.

VARLEY, Samuel Alfred.—(*Provisional protection only.*)—" Improvements in gen
" electricity."

This invention relates to treating glass tubes and cylinders for frictional electrical machines,
them more easily excited; and also to the construction of Leyden batteries and frictional elect
which possess much greater power than frictional electrical machines and Leyden batteries of
construction occupying the same space.

[Printed, 4*d*. No Drawings.]

A.D. 1868, October 31.—N° 3330.

MUNRO, Archibald, and ADAMSON, William Bennet.—(*Provisional protection only.*
" ments in the manufacture of iron, steel, and other metallic substances, such improvemen
" applicable to the manufacturing of tools made of the same materials."

The feature of novelty which constitutes this invention is the tempering & hardening of
immersion in creosote or hydrocarbon, or by re-chilling the tools several times over, or the m
from which they are made may be chilled several times before casting into tools.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 2.—N° 3331.

A.D. 1868, November 2.—N° 3332.

LODGE, John.—(*Provisional protection only.*)—" Improvements in looms for weaving."

This invention relates to,—

The weft forks employed in looms for weaving for detecting when the weft is used up or broken and for stopping the loom accordingly.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 2.—N° 3333.

LABITTE, Francois Theodule.—(*Provisional protection not allowed.*)—" A new mode of advertising."

The invention consists in applying addresses, advertisements, notices, and illustrations to articles of various kinds and forms made of ceramic materials, glass, and crystal, either by drawing or painting, by calligraphy, printing, autography, or lithography, or by photography or engraving, or by any other like process.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 2.—N° 3334.

DANNATT, James, and TURNBULL, Thomas Scott.—"An improvement or improvements in garments " for saving life in case of immersion at sea or otherwise."

This invention consists principally of an inside double lining to be applied to the jacket or other garment, the said double lining forming an air chamber, being made of india rubber or other air proof material, and provided with a flexible tube having a mouth piece with a valve opening inwards, by means of which the wearer can at any time inflate it when required.

There are also rounded straps or bands passing from back to front and from the hips round the inside of the legs for the purpose of keeping the jacket in its place when inflated.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 2.—N° 3335.

VAVASSEUR, Josiah.—" Improvements in apparatus for discharging ordnance."

According to this Provisional Specification a metal capsule like that of the cartridge of a breech loading fire arm carrying a fulminating priming and a charge of powder is put in the vent of a cannon and secured by a cover having a hole through which passes a needle to explode the priming in the capsule.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 2.—N° 3336.

BERTIE, Joseph Hume.—" Improvements in the manufacture of lace in twist lace machines."

According to this Provisional Specification a cross net is made having two warp and two bobbin threads in each pillar, and the finings are produced either by causing the threads to work to the full gauge of the machine, that is to say, one warp and one bobbin to a pillar with a gimp traversing across the fining, or else by making the warp and bobbin stand alternately and wefting them with front and back gimps.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 3.—N° 3337.

MOORE, James.—(*Provisional protection only.*)—" Certain improvements in the manufacture of woven " fabrics."

My invention consists, first, in laying two or more weft threads in one shed so as to produce a more even fabric than when single weft threads are used.

Secondly, in mixing the weft threads so as to diminish the chances of all the course and all the fine weft coming together; this is effected in an ordinary loom having a drop box with two or more shuttles at one end, and by throwing the shuttles in the required succession.

The above improvements may be used separately or combined.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 3.—N° 3338.

BERENGER, Laurent.—" An improved machine for ironing and pressing cloth or other materials."

For this purpose the iron is suspended on a frame carrying rollers, which traverse on a platform fixed above the material to be ironed or pressed.

The iron is suspended to this frame by a screw or other mechanical appliance which serves to lift it from the material and to give any desired pressure by means of the iron upon the said material.

The screw may be hollow to serve as a chimney to convey the products of combustion from the it is heated by an inside fire.

A slightly raised platform is employed upon which the material is placed to be operated up central pivot, by which means the material upon the platform can be submitted to the action of th any direction.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 3.—N° 3339.

MAIN, James Andrew Ramsay.—" Improvements in iron sheds for agricultural produce, and " otherwise."

This invention consists in arranging a light roofing of corrugated or other suitable sheet iron can be adjusted at various heights to suit the quantity of produce stacked or placed under it by it by chains passing over pulleys on the tops of light cast-iron pillars to counterweights.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 3.—N° 3340.

BARTON, Edwin.—(*Provisional protection only.*)—" Improvements in scarves or neckties."

This invention consists in making a scarf consisting of a broad flap secured round the neck through a stiff loop at the upper end of the back of which flap is passed a long narrow tie, by of two different colours with a piece of cardboard in the middle of its length, which when t position is situated inside the loop. The tie is folded over the front of the flap, and is secured ring or a pin, or the tie may be worn separately.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 3.—N° 3341.

SCHUMAN, Sigismund.—(*Provisional protection only.*)—" Improvements in treating and utili " matters, and in the apparatus employed therefor."

The feature of novelty which constitutes this invention is the special arrangement of waterclose the human excrement is allowed to drop on to a perforated pan, which retains the solids and lets t run off into tanks for easy removal, the perforated pan being also removable for emptying an purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 3.—N° 3342.

JOHNSON, Bryan.—(*A communication from Joseph Ellicott Holmes.*)—(*Provisional protectio* " New or improved tortion springs."

The novelty in this case consists in the formation of tortion springs of bars of steel or other circular, square, or other suitable section.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 3.—N° 3343.

MORANT, George Francis.—" Improvements in cases for packing game."

This Provisional Specification describes packing cases made of openwork material to ensure a free tion of air round the game which is hung up in the case.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 4.—N° 3344.

LAKE, William Robert.—(*A communication from Theodore F. Taylor.*)—(*Provisional protectio* " An improved low water alarm apparatus for steam boilers."

My invention relates to an automatic apparatus for indicating a deficiency of water in steam boiler said apparatus is provided with a whistle or other similar instrument which is attached to a tube. Th end of the said tube is open and a little below the desired water line; when the water sinks below th steam enters the tube and by its heat expands the same. The upper end of the tube is closed and p with a socket which carries the whistle. The socket communicates with the steam space of the boiler, provided with a valve. The tube carries a lever which is arranged to open the valve and sound the when the tube is elongated. The lever is held by a rod which is attached to the lower end of the tu whose length is not affected by the admission of steam to the said tube.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 4.—N° 3345.

BECKLEY, Robert Whittingham.—"An improved pen rest applicable also to inkstands."

The invention consists in the application of a magnet for holding pens.

The magnet is mounted on a block or stand preferably at an angle so as to hold the pen in position to be readily grasped by the hand.

This magnet pen rest may be applied to an inkstand if desired, or the ink might be contained within the block or stand of the pen rest.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 4.—N° 3346.

SAMUELSON, Martin.—(*Provisional protection only.*)—" Improvements in the manufacture of corru-" gated plates to be used as envelopes in lieu of haircloths, in the pressing of fatty and oleaginous " substances, and especially in the manufacture of oil cake, and new (or improved) apparatus to be used " in such manufacture."

A parallel or tapered groove, corresponding to the shape of the plate to be made, is formed on one of a pair of ordinary rollers used for rolling iron, et cetera: at the bottom of the said groove are formed corrugations, or ridges and furrows corresponding to those to be produced in the surface of the plate, which it is contemplated to make in wrought iron, steel, or other ductile metal instead of malleable cast iron.

Both the upper and lower rollers may be grooved if preferred, and the ridges and furrows may be formed on each, so as to produce the corrugations on both sides of the plate if desired.

A series of pairs of these grooved rollers may be employed to bring the plate gradually to its required dimensions and shape, and to impress the corrugations on the plate. They may be made to revolve continuously in one direction, or alternately backwards and forwards, as may be found most suitable.

Instead of employing rollers as above described the plates may be produced by submitting the metal to pressure in moulds, by means of hydraulic or other suitable pressing machinery.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 4.—N° 3347.

HOLDEN, Edward.—" Improvements in apparatus for preparing wool or other fibres."

The invention relates to effecting draft by drawing means applied between sets of gill teeth in apparatus for preparing wool or other fibres.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 4.—N° 3348.

NEWTON, Alfred Vincent.—(*A communication from Andrew Jackson Reynolds and James John Newell.*)—(*Provisional protection only.*)—" Improvements in atmospheric water-elevating engines."

The object of this invention is the elevation of water by atmospheric pressure through the agency of a vacuum, superinduced in part by the action of the discharging column and in part by the condensation of steam after it has exerted its pressure on a float or piston to aid in expelling the water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 4.—N° 3349.

HUGHES, Edward Thomas.—(*A communication from François Vouillon.*)—(*Provisional protection only.*)—" Improvements in the manufacture of furred threads and furred fabrics, and in the machinery or " apparatus connected therewith."

This invention consists,—

In coating threads or yarns of wool and other fibrous materials and textile fabrics with the hair or fur of animals, so that they shall have the appearance of real skins of fur.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 4.—N° 3350.

HOLT, Isaac, HOLT, William, HOLT, James, and MAUDE, Joseph.—" Improvements in " machinery for spinning and doubling fibrous materials."

This invention consists in an improved arrangement of spindle and an improved mode of holding the tubes which pass over the spindles to the lifting rail.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 5.—N° 3357.

COOK, Richard.—(*Provisional protection only.*)—" Improvements in the manufacture of bobbins, spools, " wharles, and tubes employed in spinning and twisting wool, worsted, cotton, silk, flax, or other fibrous " substances."

The invention consists in making such articles of sheet metal for all kinds of spinning and twisting machinery.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 5.—N° 3358.

NEEDHAM, Richard.—" Improvements in the scrapers of fuel economizers and steam generators."

My improvements relate to those fuel economizers or steam generators in which vertical pipes are used, and consists in arranging certain already known forms of scrapers, not horizontally but inclined so that their own weight keeps them in contact with the pipes which they have to scrape. The forms of scrapers used are either plates out of one side of which a semicircular piece is cut to make them fit up against the pipes, or long plates out of the side of which a number of semicircles are cut, so as to scrape a row of tubes. The scrapers may be driven by ordinary mechanism.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 5.—N° 3359.

HUNT, Bristow.—(*A communication from Alfred Charles Garratt.*)—" An improved electro-physiological " battery for application to the human body."

This invention consists of an improved electro-physiological battery constructed by arranging a series of pairs of dissimilar metal plates as elements completely insulated from each other and from the base, these elements being supplied with an excitant from the body, the plates of each pair being firmly connected, and the whole arranged upon a flexible non-conducting base.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 5.—N° 3360.]

CLARK, John.—" Improvements in machinery or apparatus for turning, boring, cutting, and shaping " wood for bobbins and similar articles."

The invention consists, firstly, in a combination of self acting mechanism consisting of a hollow spindle to carry two or more cutters capable of both rotary and reciprocatory motion, and a slidable collar. Also another spindle to both rotate and slide within the hollow one, carrying a boring bit or tool. Also one or more pairs of nipping jaws to hold the material placed therein.

Secondly, in the application of a shaft carrying two eccentrics or cranks with a connecting rod to each of the cutter heads. Also in the application of a revolving cam disc to operate upon the slide so as to press the blocks or blank faces onto and off the mandrill.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 5.—N° 3361.

REID, Alexander.—" Improvements in machinery or apparatus for rolling tobacco."

The feature of novelty which constitutes this invention is the application and arrangement of face plates between which the roll is formed, in conjunction with a guide for laying on the twist tobacco in proper position.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 5.—N° 3362.

CORBETT, John.—" Improvements in railway carriages."

This Provisional Specification describes arranging the buffers in such a way that when the carriages composing a train are forced together by a collision the buffer rods meet and abut the one on the other and form, as it were, a continuous bar of great strength from end to end of the train.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 5.—N° 3363.

BRICKNELL, Augustus Lea.—" Improvements in apparatus applicable as a rotary engine pump and " water meter."

This Provisional Specification describes various modifications and improvements in engines such as are one piece.

As regards hames, it is making the ends with a screw for connecting them one to the other.

As regards cock eyes, it is making them to screw into the trace to shorten the same.

As regards beares of double harness, it is making them to terminate in a spring to pre
lifting the bearers.

As regards rollers or rubbing plates, it is the application of such to the tugs or flaps of sad
them from being rubbed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 5.—N° 3365.

LAKE, William Robert.—(*A communication from Elmer Townsend.*)—" Improvements in
" nailing or pegging soles for boots or shoes."

This invention relates to the details of construction and arrangement of machines f
" pegging " the soles of boots and shoes to their uppers, the machine being especially designe
for cutting off nails from a continuous coil or length of wire and driving them into the so
improvements are to some extent also applicable to that class of pegging machines which
from the end of a strip or ribbon of peg wood. The said invention consists in the details o
and arrangement of mechanism for cutting the wire; for intermittently feeding it to the
cutters; for transferring the nail when cut from the joint where cut to a point in vertical
nail driver and nail tube; for feeding the shoe after each nail is driven in such manner as
insertion of each nail into the hole punctured for its reception by the awl, and for holding t
shoe under the feed foot at all times or at all points along such edge at a uniform angle with r
surface of the feed foot and the vertical line of the driver. The nail wire passes between
wheels, which have an intermittent rotary motion to bring the wire to the cutting mechanism.
tion with these wheels I arrange mechanism for varying the extent of the feed motion whil
is in operation. I also provide a stationary and reciprocating cutter, which are so formed th
the severed nail is left square while the end of the wire alone is formed with a wedge shaped
nail is held in a groove formed in a wall plate and a sliding carrier, the two when bro
forming a tube in line with the feed foot. The carrier moves the cut nail into a position in
nail driver. The latter is arranged in combination with the other parts in such a manner tha
shoe is first moved by the feed foot, is then released by the rest foot, then subjected to the
awl, then held by the transfer foot while the feed foot moves back, and then has the nail in
driver. In combination with the cutting, driving, and feeding mechanism, I employ jack mec
permits the boot or shoe to be freely manipulated to bring all parts of its surface at the same
feed foot. The boot or shoe is supported upon an arm which is so constructed and arr
vertical movement of the arm caused by variations in the thickness of the sole effects the
the feed ratchet shell, and automatically varies the length of the nails in accordance with th
the sole.

A.D. 1868, November 6.—N° 3367.

ARCHER, Charles.—(*Provisional protection only.*)—" Improvements in the manufacture of cigars."

To carry out the invention in the manufacture of the cigar in the ordinary way I form on its circumference, by means of pressure, longitudinal grooves or channels varying in number, shape, and size, according to requirements.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 6.—N° 3368.

JOHNSON, John Henry.—(*A communication from Charles Jules de Bras de Fer.*)—(*Provisional protection only.*)—" Improvements in the treatment of carbonate of lime for the preparation of pigments therefrom, " and in apparatus employed therein."

Purifying carbonate of lime by sifting it in a perfectly dry state in a peculiar sifter composed of two concentric polygonal revolving screens of different degrees of fineness. The lumps are crushed before entering the screens by passing between grooved rollers revolving at different speeds, such rollers being kept clear by combs or fixed scrapers. Different tones of white are imparted to the pigment made from the above purified carbonate of lime by adding thereto suitable proportions of fine flowers or oxide of zinc or Guimet blue.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 6.—N° 3369.

LUCAS, Thomas, and LUCAS, Thomas Palmer.—(*Letters Patent void for want of Final Specification.*) —" An improved method of fastening railway and other carriage doors."

The impossibility of the handle of the door being moved from the upright to the horizontal position without the door being fastened or secured.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 6.—N° 3370.

SAMUEL, James.—" Improvements in the construction of locomotive steam carriages to be used on " railways."

The construction of two locomotive engines with vertical boilers on bogie trucks, securing the same back to back to an intermediate carriage or waggon body, which carriage or waggon body is fastened to the centre pins of the bogie trucks, so as to enable them to radiate on curves, and at the same time to be easily detached when required.

For the purpose of working passenger traffic on branch lines, or express trains travelling at high velocities, I construct a locomotive with vertical boiler resting on a bogie truck as above, and I attach a passenger carriage having a bogie truck at one end of the same, the other end of this carriage resting on and secured to the bogie truck of the locomotive, so as to admit of its radiating on curves, and of being easily detached when required for repair or otherwise.

[Printed, 2*s*. Drawings.]

A.D. 1868, November 6.—N° 3371.

TAYLOR, James, the younger. — " Improvements in steam boilers, and in the furnace doors and fire " bridges of steam boilers."

This invention consists :—

First, of the application of rotary furnace or travelling bars to the furnaces of longitudinal, tubular, or marine boilers, by which the inventor causes the said bars after passing through the fire box from front to back to descend through an opening in the back of the fire box and return through a space below the boiler.

Secondly, of forming the furnace doors of steam boilers hollow so as to contain water.

Thirdly, of forming the firebridges hollow so as to contain water, and so connecting each of such firebridges with the boiler to which it belongs as that there shall be a clear passage for the water through the said firebridges.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, November 6.—N° 3372.

PARROTT, James, and JONES, Wright.—" Improvements in machinery for beetling woven fabrics and " other materials."

Our invention consists in attaching a succession of hammers to a shaft or roller revolving at such a speed as to cause the hammers to be throw out by centrifugal force, and to act on the fabric or other material wound on a roller or placed on a table or other surface.

The shaft with the hammers or the cloth roller or both are moved endwise to and fro.

Or several folds of fabric are passed continuously between the hammers above described or fallers of the usual construction and a roller and wound together on a batch roller.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 6.—N° 3373.

PHILIPPSON, Ferdinand Carl.—(*Provisional protection only.*)—" Improvements in pumps and fire " engines."

The outlet and inlet passages are in the body of the pump below the valves which are contained in the same chamber, the one set above the other with the passages between them.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 6.—N° 3374.

MARTINEAU, Francis Edgar.—" Improvements in hasps for fastening doors and gates, and for other " like purposes ; which improvements may also be applied to hinges."

One part of this invention consists in jointing the hasp to the plate by which it is secured to the door or gate by making on the ends of the hasp projecting pins, and making on one end of the plate and at opposite sides projecting ears, which ears, by being bent into a tubular form upon the said pins, joint the hasp and plate together.

Another part consists in jointing the flaps of hinges by making ears on opposite edges of the flaps and bending the said ears into a tubular form upon U-shaped pins.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 6.—N° 3375.

HARRISON, Thomas.—" Improvements in pianofortes."

These improvements consist in a simplicity of arrangement of those parts of pianofortes known as the butts, checks, and dampers. The butt is formed with a double notch, and each butt piece has a separate damper in connexion therewith. The lever at the end of the ordinary key works into the double notches of the butt piece, thereby causing action to the hammer and damper.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 6.—N° 3376.

BAKER, William.—" Certain improvements in furnaces and fire bars."

My invention relates, firstly, to the peculiar construction of the furnaces and fire bars ; and, secondly, to the adaptation of the same to single or double flue boilers, without cutting, drilling, or otherwise weakening the boiler or flues.

The furnace which I propose to employ is of the endless travelling fire bar class, but instead of employing endless chains carrying transverse fire bars, as hitherto used, I have a series of endless jointed fire bars placed side by side, and forming an endless chain running longitudinally through the furnace and passing round octagonal or other suitably formed rollers, one placed in front of the fire door and driven by a worm and wheel or other suitable slow movement, and the other forming a carrier only and being placed inside the flue in front of the bridge.

The frame is fixed inside the flue by means of right and left hand screwed rods having a box in the centre, by turning which the rods are screwed outwards at both sides and take a firm hold of the inside of the flue. By turning the box in the opposite direction the screwed rods are drawn inwards, and the whole system can then be readily withdrawn from the flue.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 6.—N° 3377.

MENNONS, Marc Antoine François.—(*A communication from Alexis Belaieff.*)—" Improvements in " the mode of and apparatus for forming screw threads on wrought iron bolts."

This invention relates to an improved process and apparatus for forming screw threads on wrought iron bolts.

Two steel dies or swages are adjusted in a suitable frame, one of these swages being free to move vertically between guides. The tap hole, of somewhat greater diameter than the bolt to be threaded, is drilled through the line of separation of the swages, and is of circular form in the first instance, but after being tapped is brough to an oval shape by grinding down the surfaces of contact of the two pieces.

The bolt brought to a red heat is passed into this hole, and is turned round to the extent of a quarter of a circle at each motion, while hammer power is applied to the top die, the result being the formation of a sharply defined screw thread.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 6.—N° 3378.

IRMER, William.—(*Provisional protection only.*)—" A new (or improved) corn flour jelly."

This invention has for its object the manufacturing of a jelly to be called cornflower gelly; and which said gelly will be composed of the following ingredients, viz., isinglass, gelatine, glycerine, cornflour, and distilled water.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 6.—N° 3379.

BROUGHTON, William.—" Improvements in kitchen ranges.

This Provisional Specification describes various improvements in the construction of kitchen ranges; amongst others, modes of connecting the parts together, of taking out parts that get worn and replacing with new, of fixing the trivet and the tap, of ventilating the oven, and of regulating the draft of the fire.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, November 6.—N° 3380.

CLARK, Alexander Melville.—(*A communication from Louis Gabriel Yon.*)—" Improvements in the " manufacture of ropes, cordage, lines, and twines."

The fibres, consisting of a number of rope yarns, strings, or twines, are first equally stretched, and then laid together in bundles without twisting; I then cover the whole with a sheath or envelope composed either of rope, yarn, string, or twine, or it may be of metal wire. In this manner ropes, cordage, lines, and twines may be made equivalent in length to that of the fibres, which cannot be the case with twisted ropes or cordage.

The invention is also applicable to wire ropes and cordage.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 7.—N° 3381.

HADDAN, John Coope.—" Improvements in cannon wads, and in cannon, and in the mounting of " cannon on carriages."

Constructing cannon wads of yielding or squeezeable material, such as papier machée, and having embedded or combined with same metal or other discs or keys, which may be forced into rifling of cannon and into recesses in projectiles constructed without studs or buttons, and so close the windage and impart the rifle twist to such projectiles. Making the inner end of vent or hole of bouch conical, tapering, or trumpet mouthed. The interposing papier machée in lined guns between body proper and the lining. The mounting two or more cannon (on a carriage) to rotate in or as a system round a common horizontal axis, the cannon being generally parallel to such axis, and the making recoil of individual gun fired available to cause the rotation of the system, and to bring said gun from summit or exposed position (say above level of top of parapet) into secure or lowered position without exposing the other gun or guns.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, November 7.—N° 3382.

ARNOTT, Samuel.—(*Provisional protection only.*)—" Improvements in braces."

The invention has for its object improvements in braces.

For this purpose straps, bands, or webs are employed, which are crossed or connected to each other at the back; the front ends are provided with button holes as usual, and are buttoned to the trowsers at or near the side seam, but instead of the ends which are usually buttoned to the back of the trowsers being so secured they are brought round to the front and stitched or otherwise secured to the front ends a short distance above the points, at which they are buttoned to the trowsers.

By these means several buttons on the trowsers are dispensed with, greater ease in wear is secured, and it is impossible for the improved braces to slip off the shoulders, whilst they also tend to expand the chest.

[Printed, 4*d*. No Drawings.]

tool is used, consisting of two hollow cylinders, one within the other, the inner one being free the lower end of each cylinder one half of the surface is removed, so that the 2 half cylin one position allow the entrance of debris and in the other enclose that which has enter horizontal or inclined holes a percussive action is given to the tool by a spring or springs in th spring is compressed by drawing upon the tool bar and then suddenly released. The guide cy held firmly against the inner end of the bore hole by adding extra lengths to the cylinde proceeds. This arrangement for producing a percussive action of the tool may be applied t dressing stone.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 7.—N° 3384.

BROWN-WESTHEAD, MARCUS, and JAMES, CHARLES BARTLEET.—" An improve " packing or putting up for sale needles, pins, buttons, cotton, silk, thread, worsted, or ot " embroidering materials, and in combining two or more of these articles in one packet."

This invention consists in making the ordinary flat winders upon which sewing material is u as a flat sheath or case to contain packets of needles, a few pins, or strips of buttons, or all co buttons may be sewn upon such flat winders when combined with sewing material without nee the sheaths or cases when needles are used.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 7.—N° 3385.

STEFFANSON, HÅKAN.—(*Provisional protection only.*)—" Improvements in buffers and dra " to be used on railways."

This invention relates, firstly, to improvements in the construction of railway buffers whic them to resist severe pressure and where required modify the rebound. Secondly, to means the elastic resisting power of draw rods used on railways.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 7.—N° 3386.

MACNEILL, SIR JOHN.—" Improvements in cases or holders for containing postage or ot " stamps to facilitate their application to letters or other documents, and in apparatus for d " letters or documents."

The invention relates, first, to the construction of portable cases or holders corresponding in postage or other adhesive stamps they are intended to hold, the depth of such cases depe number of stamps they are to contain. The bottom of the case is open, with the exception of thin flange projecting inwards from the sides at the bottom of the box. The postage or o stamps are introduced into the box or case by an aperture in the side or end, so as to rest on t the adhesive sides being placed towards the open end of the box. The stamps are slightly pres

When the cases are required to hold a considerable number of stamps it is preferred to combine therewith an improved apparatus for damping the letters or documents previous to applying the stamps, such improved damping apparatus being constructed according to this invention in the following manner:—A box of suitable size is arranged with a small tube passing through the box; across the box over this aperture a small trough is formed. In this trough a slip of sponge or other absorbent is secured to project above the trough, and with the sponge or absorbent material which will retain water, threads of cotton are arranged so as to communicate along the bottom of the trough and passing through the tube before mentioned into the interior of the box for holding the water. These cotton threads will keep the spongy substance sufficiently wet by capillary attraction in order to damp the letter or paper on which the stamp is to be affixed.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 7.—N° 3387.

JOHNSON, John Henry.—(*A communication from Paul Henri Ferdinand de Résener.*)—" Improvements " in machinery or apparatus for cutting screw threads."

This invention relates to certain peculiar constructions and arrangements of machinery or apparatus to be worked either by power or by hand for cutting screw threads whereby any variety of form of screws may be cut in the same machine by a simple adjustment, whilst the machine itself is cheaper and much more simple than those hitherto employed for screw cutting. The essential feature of novelty in this invention is the employment of a travelling inclined plane, the angle of the incline being adjustable by means of a screw and adjusting nuts for the purpose of imparting the necessary longitudinal traverse to the screw blank or to the cutter, such travelling incline being moved forward in a guide by means of a pinion in gear with a rack on the slide which carries the incline. This actuating pinion derives its motion from the mechanism which rotates the screw blank or cutter, as the case may be, so that the rate of motion of the incline along its guide is always in proportion to the speed of rotation of the screw blank or of the cutter, and hence a spiral or screw thread will be produced upon the blank. By varying the angle of the incline or by altering the speed of rotation of the screw blank or of the cutter, or by combining both these changes, it is obvious that screws of any desired pitch or number of threads may be cut without the necessity for employing the numerous change wheels requisite in ordinary screw cutting lathes.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 7.—N° 3388.

STURROCK, James.—" Improvements in metallic caps, and in their application to bottles or other " vessels."

The feature of novelty which constitutes this invention is the application to bottles of a metallic cap having a central perforated projection, over which is screwed a secondary cap, the removal of the latter at any time allowing the contained fluids or liquids to be sprinkled as desired.

[Printed, 6*d.* Drawing.]

A.D. 1868, November 7.—N° 3389.

CLARK, Alexander Melville.—(*A communication from Charles Gabriel Nicolas Schœnberg, senior.*) —" Improvements in machinery for planing, mortising, and otherwise preparing wood, metals, and other " materials."

The object of this invention is to dispense with the fly wheel usually employed in hand and other machines by substituting therefor a progressive diminution in the speed of the working tool during its traverse of the course assigned it in the machine. This is effected by means of a toothed segment operated on by a hand lever or otherwise and gearing with a second toothed segment turning on a fixed pivot, the latter segment being connected to the working tool by a rod, so as to form a toggle joint. In this manner as the tool approaches the end of its course its speed is slackened and the power over it consequently increased by the action of the toggle joint, so that the effort of the operator may diminish as the tool engages with the work without prejudice to the latter, thus obviating the necessity of a fly wheel for storing power during the intervals of working.

[Printed, 2*s.* 6*d.* Drawings.]

A.D. 1868, November 7.—N° 3390.

CLARK, Alexander Melville.—(*A communication from Lucien Henri Blanchard and Louis Léon Henri Provost.*)—" Improvements in the separation of solid matters contained in liquids, and in apparatus for the " same."

I separate utilizable matters from water in a closed vessel under pressure of a column of the liquid, said

material is placed on the false bottom and under the nozzle pipes. The vessel is then supplie
and soap or other detergent being placed under the false bottom or in the vertical tube, he
below, by which the water is caused to rise in the vertical tube, and then descend by the radiatin
to the linen, which is cleansed by the constant circulation of hot water thus produced.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 7.—N° 3392.

CORDEN, William.—" Improvements in lamp globes or glasses."

This Provisional Specification describes forming lamp globes or glasses double, and the space
outer and inner glass is filled with liquid.

It also describes forming the inner surface of a single or double lamp globe or glass of a seri
meeting at angles, whilst the exterior is left smooth.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 7.—N° 3393.

BOUSFIELD, George Tomlinson.—(*A communication from Silas Divine.*)—" Improvemen
" and barring soap."

This Provisional Specification describes cooling soap in the form of bars in metal tubes, an
forcing out the bars from the tubes. To cool the soap rapidly in the tubes they are surrounded
water; soap is supplied to the tubes at one of their ends, and when cooled is forced out at the o
An arrangement for effecting this when a pump is employed for supplying hot soap to the t
described, the expulsion of the cooled soap from the tubes at one of their ends being in this
effected by the forcing in the hot soap at the opposite ends.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 9.—N° 3394.

WILSON, Newton.—" Improvements in sewing machines."

This invention relates particularly to that class of sewing machines known under the nam
machines, or in any machines wherein an equivalent for a shuttle is used, such as a bobbin or
These improvements being principally to effect an easier method of taking in and out the shuttl
and replacing them again in their seatings or recesses. Other improvements relate to the con
certain parts of my improved driving gear, as patented by me, bearing date the 14th day of Fe
with a new method of obtaining a motion from the pinion shaft to drive the lever which drive
slide, the whole being a combination and new arrangement of parts constituting my improvemen
machines.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 9.—Nº 3396.

MANWARING, William.—(*Letters Patent void for want of Final Specification.*)—"Improvements in "reaping machines."

This invention consists in an arrangement whereby the revolving rakes now used in certain self acting sheaf delivery reaping machines for the automatic delivery of the cut grain in sheaves at the side of the machine may be made to serve in conjunction with a tilting or drop platform for the automatic delivery of the cut grain in sheaves at the back of the machine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 9.—Nº 3397.

McHARDY, Robert.—"An improved implement for hoeing land and removing weeds or superfluous "plants therefrom."

The feature of novelty which constitutes this invention is the arrangement of a shaft or bar mounted on a pair of wheels at one end, whilst at the other end a handle is placed by which the operator actuates the implement.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 9.—Nº 3398.

HUNT, Bristow.—(*A communication from Antoine Gayet, the younger.*)—(*Provisional protection only.*)— "An improved woven fabric."

This invention consists principally in the novel combination of a woven fabric in which the warp threads are of any ordinary fibrous material or metallic threads, and the weft of fibres of the aloe, more commonly called manilla or vegetable silk. This fabric presents a new effect, and may be substituted advantageously for straw plait.

This result is obtained by spacing out in any convenient manner the warp threads with which the weft (composed of four, six, or other convenient number of manilla fibres placed flat side by side) is interwoven

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 9.—Nº 3399.

BROWN, William Morgan.—(*A communication from Peeters Van Dyk.*)—"Improvements in man "engines for raising water and lowering and raising men."

The object of the invention is to utilise the man engine ordinarily employed in lifting the miners as a means of lifting the water of the mine during the time the man engine is otherwise unemployed.

For this purpose to each shaft of the lifts of the man engine is attached a series of tipping buckets which alternately with each stroke of the lifts are emptied and filled into each other, thus with every stroke of the one lift lifting all the water in the buckets one stage and discharging their contents into the buckets of the other lift when at its lowest point of stroke, and with each stroke discharging one bucket of water at the day level or ground level of the mine.

To suspend the action of the tipping of the buckets whilst the men are being lifted, the man engine is constructed with a variable stroke, that is, whatever stroke is used for lifting water, a portion of it will be required for the action of tipping the buckets; when the men are to be lifted the stroke is reduced by that portion, the remainder being equal to the distance apart of the landing stage for the men.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 9.—Nº 3400.

DE WISSOCQ, Paul Emile.—"Improvements in treating lead ores."

According to this Provisional Specification lead ores are treated with hydrochloric acid. The chloride of lead is dissolved out with boiling water, and the lead is precipitated by means of iron. It is collected and melted into pigs. The residue is treated with brine to extract silver, which is then precipitated with copper. The sulphuretted hydrogen produced in the first operation is collected and utilized,

[Printed, 10*d*. Drawing.]

A.D. 1868, November 9.—Nº 3401.

LAKE, William Robert.—(*A communication from Matthew Andrew.*)—"An improved method of "securing a door knob or other handle upon a spindle."

The said invention consists chiefly in the employment of a spring so fitted and secured in a recess formed in one side of the spindle aperture of the knob or handle that it will set into a ratchet formed on the spindle in a manner to allow he knob to be pushed forward on the said spindle but not to be *who have purchased this volume.*]

A.D. 1868, November 10.—N° 3403.

BENNISON, Henry Leonard.—" An improved rotary engine and pump to be driven by
" power."

Constructing engine with four-way cock for working supply and exhaust; also with i
causing blades to take the necessary in and out movement. Constructing improved cock,
partially open to admit steam it allows of a free exhaust. Using the improved engine as a
pump.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 10.—N° 3404.

ISRAEL, Louis Ash.—(*Provisional protection only.*)—" Improvements in the mode of and
" apparatus for manufacturing sulphuric acid."

The discarding the large leaden chambers & substituting in their place small cylindrical
with revolving gear; the peculiar fitting of the cylindrical vessel in reference to the working
supply of water to it, the concentrating apparatus superseding the costly platinum retorts
use; the arrangement of the vessels and the application of machinery to the manufacture.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—N° 3405.

ROSE, Thomas, and GIBSON, Robert Emerson.—" Improvements in utilizing a certain
" obtained in treating cotton seed, and in machinery employed therein."

The waste material here is the fibre and husks left after treating cotton seed by machine
and separate the kernels. This material has not hitherto been utilized, and the inventors
follows:—The fibre in the production of " paper stock," and the husks in oil cake for feeding
separation of the fibre and husks is effected by tearing and sifting machinery. The fibre
treated by an alkali or alkalies preferably heated, and the husks are mixed with the substan
to form oil cake.

The tearing machinery consists of rotating, serrated, fluted, or otherwise roughened rolls, a
machinery of a vibrating screen or a rotating screen with beaters.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—N° 3406.

TYLER, Philos Blake.—(*Provisional protection only.*)—" Improvements in splices for co
" ends of rails on railways."

A.D. 1868, November 10.—Nº 3407.

JOHNSON, John Henry.—(*A communication from Louis Coignard.*)—(*Provisional protection only.*)—"A "mode of and means for utilizing the waste heat of furnaces employed in the manufacture of 'coal gas.'"

This invention has for its object the application and utilization of the waste heat of the furnaces employed for heating the retorts used in the manufacture of coal gas to the generation of steam for the working of pumping engines for supplying towns with water, whereby considerable economy of fuel is obtained and the water supply of the town or other locality by being thus carried out in conjunction with the production of the illuminating gas for the same town or locality may be more economically conducted than heretofore.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—Nº 3408.

CLARK, George.—"Improvements in the treatment, manufacture, and use of explosive compounds."

The features of novelty which constitute this invention are,—

1st. Obviating the necessity of and dispensing with the process of washing pyroxyline in water for the purpose of separating from it any remaining excess of acids after it is withdrawn from the acid bath.

2nd. Improving the properties of pyroxyline as an explosive compound by means of the chemical action resulting from the admixture of carbonate, bi-carbonate, chlorate, or chromate of potash with pyroxyline after it has been withdrawn from the acid bath and drained from excess of acids in the manner described in the Specification hereunto annexed.

3rd. Forming the explosive compounds produced by the processes described in the Provisional Specification of this my invention, and in the Final Specification of my invention for which I obtained Letters Patent, numbered 1210, and dated the 11th April 1868, in the manner described in the Provisional Specification hereunto annexed.

4th. The use of glycerine oil for the purpose of improving and adding to the strength of explosive compounds, of which pyroxyline is the basis, by submitting vegetable fibre with such glycerine oil and treating those substances simultaneously with nitric and sulphuric acids instead of mixing nitro-glycerine with any other substance.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—Nº 3409.

HINE, John.—(*Provisional protection only.*)—"Improvements in apparatus for cutting or dressing mill-"stones."

The apparatus consists of a rectangular frame in which works the block containing the diamond or other cutter. This frame is firmly attached at any suitable angle to a radial arm working freely on the axis of the stone. When a line has been cut by traversing the cutting tool from one end of the frame to the other, said frame is advanced for making a second cut, by turning a thumb screw working in a screw socket pivoted to a plate resting on the stone, said screw being received in the rear of the frame.

The block containing the cutter has a projecting flange on either side, received in a recess in the under surface of the frame, so as to keep the tool close down on the surface of the stone during the cutting operation, which will be further facilitated by adjusting several stones to cut in the same line, the depth of the cut being gradually increased by each.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—Nº 3410.

WINBY, Clifford Etches, and WINBY, Frederick Charles.—(*Provisional protection only.*)——"Improvements in the means and mode of signalling on railways for the purpose of preventing collisions "between trains, more particularly trains following each other."

In order to prevent collisions between trains we use a signal arranged to burn with different colors successively, the signal being provided with a suitable fuse to be ignited by friction. When danger is apprehended from one train being followed closely by another, one of the above signals would be ignited by the guard or other person in charge of the first train and thrown on the line to warn the driver of the second train of his proximity to the first. Each color is arranged to burn for a certain period; the signal would as same time show by the color that was burning the time that had elapsed since the passage of the first train.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—Nº 3411.

WILSON, John Hays.—"Improvements applicable to waterclosets in ships and vessels."

The invention consists in the adoption of a cistern or dry well for receiving after use the contents of water-

A.D. 1868, November 10.—N° 3413.

HALL, WILLIAM HATHERTON, and COOKE, JOSEPH.—(*Provisional protection only.*)—
" in safety lamps."

The safety lamp is intended for burning petroleum or other like oil. The burner is so con
flame burns brightly without additional glasses. The burner is made by first casting a shel
so made that it can be screwed to the lamp body. On this shell is a diaphragm which conts
is fastened, the wick tube. This diaphragm is raised to allow space for pinions or wheel
lowering the wick. Over the diaphragm and wick tube is a cone, open at the top for the fl
holes at the bottom to feed the flame. The wick tube is preferably flat and reaches to the
The parts of the burner are fastened at the centre. It is preferred to form the top of the la
with holes round the base, inside which is a smaller cone or tube which breaks the draft, but
the foul air from the lamp.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—N° 3414.

CAIN, THOMAS.—(*Provisional protection only.*)—" Improvements in the method of an
" treating potatoes in order to prepare them for food."

After cooking the potatoes in the usual manner air is passed through and between them
any water or steam that may be on or between them and prevent it from being mixed with
potatoes are then passed between two rollers; one roller has a plain surface and the other
with wire cloth or such like material, through which, as the potatoes pass between the
pressed into the interior of the latter roller, leaving the skin on the surface of the wire c
material.

This roller may be covered with wire cloth or have an endless web of wire cloth passin
roller may be finely perforated to allow the potatoes to pass through.

All or part of the above means may be used with other usual operations in the proces
potatoes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—N° 3415.

HICKISSON, JAMES.—" Improvements in the manufacture of pencils for writing or m
" and other textile fabrics, and on other surfaces."

The pencil is especially intended for marking garments and other fabrics to be washed, a
exposed to damp and moisture.

The pencil is manufactured of a composition of materials which will fuse, melt, or d
manner that the mixture when fused, melted, or dissolved may be run or cast into moulds o
and may set or harden therein: the composition in this condition will be fit for writing or ma

One mode described of preparing the compound is to fuse the ingredients in a vessel by means of heat applied by a spirit lamp or other heating medium, and when in complete fusion the composition is run into a heated mould and there allowed to cool, set, and harden. When cool and set it can be fixed in a case ready for use.

When the pencil is to be used on textile fabrics they should be damped, preferably using water holding neutral tartrate of potash or ordinary washing soda in solution.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 10.—N° 3416.

ABBOTT, Otho Giles.—"An improved apparatus for the distribution of sewage, water, and other "fluids."

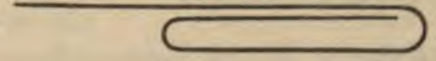
The centre portion of the apparatus consists of two wheels, which revolve upon a hollow perforated tube forming the axle. The range of the apparatus can be extended by means of additional perforated tubes, which are attached to the central tube and supported by wheels at their extremities. The sewage or other fluid is supplied to the central perforated axle by means of hose from the centre of the plot of land to be irrigated. The apparatus is drawn in a series of circles over the surface of the ground around the source of supply, the hose being shortened as the circles approach the centre.

[Printed, 1*s*. Drawing.]

A.D. 1868, November 10.—N° 3417.

RIDDLE, William.—"Improvements in hooping bales or banding them with iron, and in apparatus "connected therewith, part of which invention is applicable to other purposes."

This Provisional Specification describes hooping bales by forming loops thus at the ends of the hoops which encircle the bales, and passing a lath through such loops.



[Printed, 10*d*. Drawing.]

A.D. 1868, November 10.—N° 3418.

CRAMPTON, Thomas Russell.—"Improvements applicable to furnaces for burning combustible liquids, "either alone or in combination with other fuel."

According to this Provisional Specification liquid fuel is taken into a close furnace by a blast of air from a fan, so that all the air necessary for combustion enters with the liquid fuel. Various details and modifications are described.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 10.—N° 3419.

BESSEMER, Henry.—"Improvements in the manufacture of cast steel and homogeneous malleable iron, "and in the fusion or melting of different kinds or qualities of iron and steel and their alloys, and also in "the construction and mode of working the furnaces and apparatus employed for such purposes."

According to this Provisional Specification furnaces are used for melting iron or steel, into which a blast under pressure is forced, and the passage for the escape of the products is made very small and adjustable so that a high pressure, varying from some pounds to several atmospheres, is maintained within the furnace.

Several forms which the furnace may take, and numerous applications of it to the melting of various descriptions of iron and steel, are described.

[Printed, 3*s*. 6*d*. Drawings.]

A.D. 1868, November 11.—N° 3420.

VAUGHAN, Thomas, and **WATTEEU**, Emile.—"Improvements in screw bolts and in the means for "securing the nuts thereon."

This invention consists in making screw bolts hollow or with a recess at the screwed end or ends, and in securing the nut or nuts thereon by driving a mandril into the open end of the recess so as to widen out the projecting part of the bolt.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 11.—N° 3421.

DIXON, Edward, and **DIXON**, Frederick.—(*Provisional protection only.*)—"The better, more securely, "and quickly packing bottles of every description; such invention is adaptable to boxes, cases, and "refrigerators."

The better, more securely, and quickly packing wine bottles generally and any other fragile vessel by means of elastic compartments at either the top, bottom, or sides, to receive the neck of the bottle; while pipes extending upwards and outwards, and having at their ends small mouth pieces or jet oil to all four axles at once.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 11.—N° 3423.

MADGE, Edward.—(*Provisional protection only.*)—"Improvements in the mode of and "manufacturing tin, terne, and other coated plates."

To ensure an even coating to the plate I so speed the delivery of the plate that the rate a from the bath shall correspond with the drain flow of the molten metal down the coated plate.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 11.—N° 3424.

THOMSON, William Sparks.—"Improvements in the manufacture of corsets, jackets "other like garments."

Felted cloth as it comes from the fulling mill or previous to its being stretched and fi market, or felted cloth tubes specially made for the purpose, while saturated are strained metal mould or former of the required shape and left to dry thereon, and thus will receive shape desired.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 11.—N° 3425.

DAVIES, Morgan Henry.—"Improvements in the construction of fences where straine "strained material is employed, part of which improvements is also applicable to the gear "windlasses, and other winding barrels and to other gearing."

This Provisional Specification describes a winding barrel mounted upon an eccentric. It the two cheeks of a straining post and has a pinion on it gearing with a toothed ring aroun upon one of the cheeks of the post.

Modifications of the arrangement are described, some of which are applicable to other gearin

[Printed, 10*d*. Drawing.]

A.D. 1868, November 11.—N° 3426.

WILSON, George, senior, and **WILSON, John,** junior.—"Improvements in kilns for b "cement, pottery and earthenware, and other articles or substances, parts of which imp "applicable to furnaces generally."

This invention relates to certain improvements in kilns suitable for burning salt glaze cotta glazed bricks, and earthenware in general, and is partly applicable to furnaces for other has for its object the consumption of smoke, the saving of fuel, and (when applied to kilns) t of a superior article.

fuel to the fire hole and for admitting hot and cold air thereto. The front of the fire hole is perforated with numerous holes leading into various parts of the fire and supplying air thereto for keeping up an uniform and active combustion. These kilns, which are a considerable improvement upon the old system, work with up and down draught so that they can be used for any class of pottery-ware. The fire holes, moreover, are applicable to other furnaces than those intended for pottery kilns. The bottom of the kiln is provided with a number of radial and intersecting flues which are only open at the centre, and when used for earthenware kilns they receive the heat from the fire holes by direct flues, whereas in the old kilns the fire is cut off by indirect flues, thereby causing at least ten per cent. extra outlay in coals and labor. The crown of each kiln is perforated with three holes to every fire hole for the purpose of clearing off the gas so as not to stain the goods.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 11.—N° 3427.

HOLMES, Frederick.—(*Letters Patent void for want of Final Specification.*)—" Improvements in the " manufacture of smoking pipes."

This invention has for its object the cleaning and freeing of smoking pipes from the essential oil of tobacco and other deleterious substances, and consists in making an orifice at the end of the pipe in continuation of the tube and fixing a plug therein which is made removeable for the purpose of cleaning. This pipe, which the inventor designates "the main drainage pipe," can be readily cleaned at both ends by removing the the plug, and the essential oil may be discharged by blowing through the tube, whilst the pipe is charged and lighted without disturbing the tobacco or extinguishing the same. It is more economical than ordinary pipes, since the tobacco can be completely consumed by reason of the moisture being all drawn away. All stoppages of the pipe, moreover, are also entirely obviated.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 11.—N° 3428.

PIERCY, George.—(*Provisional protection only.*)—" A new or improved safety stay for the shafts of " carriages."

This improved safety shaft stay consists of a flat bar or plate of iron jointed at one end by a " dragon tongue " bolt to the outer wheel iron of the shaft, and connected at its other end to the shaft by a collar bolt near the shaft bolt, the said collar bolt working in a slot in the said stay. By means of this collar bolt the stay is held with considerable friction, so that the shaft may be supported in any position between the horizontal and vertical, to which it is raised without risk of falling. The stay when the shaft is in a horizontal position covers the shaft bolt and prevents its displacement. The stay also strengthens the shafts and prevents them nipping the horse's shoulders.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 11.—N° 3429.

LEWTHWAITE, John.— (*Provisional protection only.*)—" Improvements in machinery for the shaping of " wood and similar materials."

This invention consists of improvements in shaping machinery adapted for the cutting of wood or similar material for the purpose of producing accurate forms in clog-soles, pattern-boards, sweeps, and patterns used in mechanical and other drawings, oars and sculls for rowing, spokes for wheels, blocks, barrel heads, and staves, and other irregular forms in which duplicates are required, or multiplication of parts or numbers, the object being to obtain exact similarity.

And also by such an arrangement of the cutters of the machine, that cutting against the grain of the wood or other substance in use will be obviated and an improved surface thereby obtained.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 11.—N° 3430.

CLARK, Alexander Melville.—(*A communication from Jules Derriey.*)—" Improvements in cylinder " printing machines."

I print either from moveable type or stereotypes, mounting them on a large drum, the surface of which is divided into four equal parts, two containing type and two forming inking tables alternately placed. In this manner the sheet may be printed on both sides in one revolution of the drum. The number of feeding tables is varied according to the supply required at the above rate, or instead of this arrangement I may use rolls of paper severed at the required length by a cutter before passing to the machine.

The improvements are also described as applied to a small two cylinder machine using stereotypes. In this case the sheet after being printed on one side is transferred to another cylinder for receiving an impression on the reverse side. The sheet then passes downwards to a divider for transferring the sheets to one or other of the receivers at opposite ends of the machine.

The mode of supplying and severing sheets of paper from a roll is also applicable to all kinds of printing machines.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, November 12.—N° 3431.

CHAPLIN, Charles John.—(*A communication from Edward Chaplin and Edward Payne.*)—(*Provisional protection only.*)—" An improved composition for cattle food."

According to this invention the refuse of grain used in brewing or distillation, or of beets, potatoes, carrots, and other vegetables in the process of distillation are separated from their fluid contents by passing them over a hair or other strainer, and by subjecting the mass to pressure between rollers or otherwise.

The pulp is then mixed by an agitator, and linseed-meal, peas-meal, bran, or other farinaceous material is added, also aromatic substances, such as carraway seeds, cummin seeds, possessing essential oils or preserving properties, which at the same time impart a flavour to the composition, after which the whole is compressed into cakes which are dried in a kiln.

The farinaceous and aromatic substances may, however, be omitted, and the pulp treated alone.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 12.—N° 3432.

HOLT, Samuel, and HOLT, Greenwood.—(*Provisional protection only.*)—" Improvements in the " manufacture of pickers."

This invention consists in joining the various parts of pickers together by hollow tubes having flanges thereon, or by passing rivetts or wires through such tubes and securing them at the end.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 12.—N° 3433.

HENKEL, Henry.—(*A communication from Gustav Bloem and Ernst Scheidt.*)—(*Provisional protection only.*)—" Improvements in breech-loading fire-arms and in cartridges to be used therewith, and with other " descriptions of breech-loading fire-arms."

The invention relates, firstly, to improvements in breech loading fire arms. For this purpose a suitable cylindrical chamber is fixed to the breech end of the barrel to receive a moveable breech piece which is capable of being moved to and fro therein by means of a knob fixed thereto, the cylindrical chamber being formed with a suitable opening to receive the cartridge when the breech piece or plug is moved back. This cylindrical chamber is also formed with a slot to permit of the to and fro motion of the moveable breech piece, and to hold such moveable breech in either position as required.

Within the moveable breech is a chamber to receive a bolt, to the forward end of which is fixed the igniting needle. In the rear end of the moveable breech is an opening through which the bolt with the igniting needle is inserted into the chamber formed in such plug; such bolt and igniting needle being secured in position by a screw plug which takes into a screw thread formed within the moveable breech; a recess is formed within such screw plug to receive and guide the rear end of the bolt.

The screw plug has a large head in order that any gas may be prevented passing in that direction, and the screw plug is prevented from turning by means of a catch mounted on an axis of motion carried by the head of the screw plug, and acted upon by a spring to hold it in the required position, the lower end being capable of entering a notch formed in the end of the breech case. Or when it is desired to hold the parts secure against an incidental discharge of the gun, the upper end of such catch is pressed forward so as to enter the slot in the top of the breech case. In the breech case a groove is formed to receive the cartridge extractor and a safety catch, and at the same time permit of their moving to and fro with the moveable breech, a suitable circular groove being formed around the front end of the moveable breech to receive a projection from the cartridge extractor. There is also an inclined groove or recess in the moveable breech to give motion to the safety catch, when it is required to withdraw the end of the igniting needle within the moveable breech, a projection on such safety catch coming against the forward end of the bolt carrying the igniting needle. When the moveable breech is forced up to the breech end of the barrel and turned on its axis, such safety catch is moved forward by the inclined groove so as to permit of the igniting needle moving to its full extent when the trigger is pulled, a spiral spring being employed to act upon the bolt carrying the igniting needle and force it forward to ignite the cartridge. The trigger is attached to a spring fixed underneath the breech piece; there is a catch attached to such trigger, so that when the moveable breech is moved back in readiness for reloading a projection on the bolt carrying the igniting needle passes over the catch on the trigger and is retained thereby, so that in the forward motion of the moveable breech in the act of reloading the spiral spring is compressed. And in order to prevent the discharge of the gun until the parts are in the proper position the catch last described is formed with an undercut recess, into which a projection from the moveable breech passes so as to prevent the action of the trigger until the moveable breech is turned into the proper position. When the upper end of the catch or stop at the rear end of the moveable breech is pressed forward into the slot in the breech case, the moveable breech is turned slightly round so as to bring the catch and projection just described into position to prevent the discharge of the gun.

In the front end of the moveable breech is a slight recess to receive and collect any dirt formed by the gases caused by the explosion. A recess is formed around the interior of the breech case close to the end of the cartridge to receive any gases arising from the explosion, such gases being caused to escape through a slit in the breech case communicating with such recess.

The invention relates, secondly, to improvements in cartridges. For this purpose the case is formed either of metal or of paper, as desired, and a paper wad is employed at the rear end as usual, but such wad is according to the present invention strengthened inside the outer case with a metal thimble or cup completely covering the end, and passing a short distance up the side thereof.

In the centre of the paper wad is fixed a metal tube closed at its forward end, and having two or more openings in the side thereof, near the front end, to permit the flash from the percussion cap or detonating material to pass to the charge. Such tube is formed with flanges to bear against the rear end of the paper wad, and has placed therein, at its front end, the detonating material, and at its rear end a pointed anvil.

The metal end and rim of the cartridge is entire, having no hole formed therein, but being entirely closed so as to offer an effectual protection against any accidental discharge, and prevent the escape of gas at that part.

The metal tube or chamber in the centre of the cartridge and the anvil therein may be made of any length desired.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 12.—N° 3434.

HELY, Alfred Augustus.—(*Provisional protection only.*)—" Improvements in umbrellas, sunshades, " and parasols."

The covering is attached to the frame by fastenings, so that it can be removed and replaced by another when required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 12.—N° 3435.

COLLINGWOOD, Thomas Butterworth, and HARDMAN, William. — " Improvements in " machinery for the manufacture of spindles and flyers, part of which machinery is applicable for cutting " screw threads for other purposes."

The invention relates to machinery for cutting or forming " quick " pitched screw threads, and applies more particularly to spindles and flyers, and consists in using separate radiating cutters, one for each thread, which can be adjusted simultaneously; the part carrying these cutters is made to rotate and advance screwwise, to cut the thread upon the spindle, which is fixed, or the spindle has this motion and the cutters are fixed, or the spindle has one motion and the cutters the other; or the invention consist in using one or more cutters, but fewer than the number of threads required, and operating as above described, having arrangements to advance the cutters or spindle after each cut. Also in making a machine selfacting on the principle last described when the cutter has both movements and the spindle only turns after each cut.

The machine last referred to may be used for " tapping " flyers and for cutting screw threads for other purposes. The invention also consists in forming threads by a milling process.

The invention also consists in tapping flyers by means of a tap carried by a screw shaft agreeing with the pitch of the thread of the tap, and in arrangements by which flyers may be held and advanced so as to be operated upon by a series of taps in succession.

[Printed, 1*s*. Drawing.]

A.D. 1868, November 12.—N° 3436.

LIVSEY, Peter Joel.—(*A communication from Thomas Antoney Macaulay.*)—" Improvements in sewing " machines."

The improvements consist—

1. In an improved construction of the combination crank for which (amongst other improvements) Letters Patent were granted to the inventor, T. A. Macaulay, No. 2, dated January 2nd, 1865.

2. In a lever having its fulcrum adjustable on the pressure bar, and connected to the needle bar by a link for controlling the thread which passes through a hole in the end of the lever.

3. In mechanism for driving the shuttle, which is done by an oscillating shaft actuated by a crank and rod from the upper shaft; the shuttle driver slides in a straight groove, and is connected to a rod socketed and sliding in an arm on the oscillating shaft.

4. In suspending the feed wheel or device on a crank shaft, by turning which by an arm the feed may be raised or lowered to suit the thickness of the material.

5. In arranging a cam on the oscillating shaft to act upon a lever jointed upon an arm that actuates the propeller for the feed, a screw in the arm acting upon the lever to adjust the length of the stitches.

6. In making a needle bar bevelled on its edges, with a bevelled groove in its face, placing it wholly in the face plate, and in using a gib and screw at each end to tighten it against wear.

7. In making the attachment of the face plate entirely on one side of the pitman for the needle bar.

8. In elongating the needle hole in the throat plate to allow the thread to lock more freely.

9. In a "hemmer" having elasticity to give way to varying thicknesses of material.

10. In a "feller" having elasticity to give way to varying thicknesses of material, and which allows the fell, by turning it under instead of over, to get under the presser foot to ensure feeding with certainty.

11. In attaching the presser foot to its bar by a clip and screw.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 12.—N° 3437.

GRIFFITHS, DAVID.—(*Provisional protection only.*)—" Improvements in the formation of timber bearers " for roofs and other purposes."

This invention consists in cutting or removing the needless wood at certain angles from the extremities of a timber bearer, and placing the same in a central position on the timber bearer to sustain the chief pressure; also for forming bearers of timber out of the solid with the same object.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 12.—N° 3438.

GRIFFITHS, WILLIAM RICHARD.—(*Provisional protection only.*)—" Improvements in boilers or steam " generators."

Tubular fire bars above and below the fire-place, connected with the water space of the boiler, and flat iron plates placed on the upper set to collect the heated gases and direct them so as to increase the heating surface.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 12.—N° 3439.

WRAY, LEONARD.—(*Provisional protection only.*)—" Improved apparatus for crushing and grinding quartz " and other hard substances."

Crushing blocks are made to oscillate between fixed blocks, and thus crush and grind up the substance to be operated upon.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 12.—N° 3440.

HAAS, EMIL.—" Improvements in sewing machines."

This Provisional Specification describes a single thread sewing machine in which a barbed needle is used and in which the needle effects the feeding forward of the fabric. The thread is led from a reel through a curl or loop of wire on the under side of the table of the machine; the needle takes up a loop of this thread through the fabric and then again descends, the loop being at this time held clear of the needle by a finger pressed forward by a cam.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 12.—N° 3441.

DONISTHORPE, WORDSWORTH.—" Improvements in machinery for getting coal and minerals, part of " which invention is applicable also to steam hammers and other similar reciprocating machinery."

According to this Provisional Specification the outward or non-effective stroke of the apparatus is produced by the direct action of the air or fluid under pressure, which at the same time is made to draw back a piston forming a vacuum beneath it.

The inward or effective stroke is produced by the vacuum drawing back the piston, aided by expanding the air or fluid which produced the vacuum into a larger capacity. A cutter bar for cutting coal or mineral is also described.

The cutters are arranged on the bar so as to balance on either side of the line of thrust, and they are placed at distances apart less than half the stroke of the bar. The sockets are made with lips to support the cutters immediately behind the cutting edges.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 12.—N° 3442.

WHITE, George Preston.—" Improvements in the construction of screw piles, posts, and moorings."

This Provisional Specification describes forming the thread of screw piles or posts of wrought iron or steel. Modes of fixing the screw thread are described. Screw moorings may also be thus constructed.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 12.—N° 3443.

KELLOW, Joseph.—" Improvements in machinery for cutting rock, stone, and minerals."

The machinery is for cutting rock, stone, and minerals into steps and galleries to facilitate working, and to avoid the necessity of cutting floors by blasting. The machine carries at front worm drills or boring cutters, consisting of worm rods terminating in cutters, preferably spear headed or angular, and preferably alternating with each other, one having lateral cutting edges protruding where the sides of the next do not protrude, and so on. These implements may be so mounted that one presents its flat side while the next presents its edge to the surface to be cut, and so on alternately. They fit into sockets or collars, whence they are readily removeable, and are supported on a sliding frame worked by a worm; two other shafts also support them. These drills or cutters are driven by pinions or wheels worked by a worm actuated from the main shaft. When they have acted they are removed, the sliding frame drawn backward, and a jointed or hinged chisel cutter (which is turned out of the way when not in use) is brought into action. This is a plate having chisel cutters at one edge; its opposite end has brackets which embrace a worm shaft on which it traverses. This cutting implement is so arranged that it turns over a stop rest or block, which protects the ends of the worm shafts or their collars or sockets, and presents a smooth surface for a sliding tool. At the back of the machine is a jointed bracket carrying a weighted drill or boring cutter rotated by cone pulleys or the like worked from the driving shaft and capable of being turned to four opposite angles to perforate or cut the ground and allow the machine to be plugged or fastened in place.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 13.—N° 3444.

OWEN, Edward.—(*Provisional protection only.*)—" Improvements in the manufacture of cases for night " lights."

This invention relates to the manufacture of cases for night lights, so as to render them fire-proof.

According to my invention the cases, which are ordinarily made of paper or cardboard, but which may also be made direct from paper pulp, are impregnated in the course of their manufacture with tungstate of soda, phosphate of ammonia, borax, or other of the well known materials or compounds now used for rendering dresses and other fabrics fireproof.

This impregnation may be effected in various modes, as, for example, by the admixture of the material employed with the pulp from which the cases are afterwards made, or by adding it to the paste employed in fixing the labels on the boxes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 13.—N° 3445.

THOMAS, William.—" Improvements in the manufacture of boots and shoes."

This invention consists in first sewing a welt to the sole of a boot or shoe, and then, the edge of the welt being previously or subsequently turned up, the inverted upper is sewn thereto, both of which operations are readily performed by the sewing machine.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 13.—N° 3446.

WALKER, Bernard Peard.—" Improvements in forging or shaping metals, and in the machinery or " apparatus employed therein."

This invention consists in the application of the copying principle to forging machines such as those known as Ryder's forging machines, or modifications thereof thereby enabling copies of a model to be produced by dies or hammer faces, which need not be, as is the case in the ordinary and well known process of stamping, the counterpart of the article to be produced.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 13.—N° 3447.

DENDY, John, and BIGGS, John Howard Worthington.—"Improved arrangements of warps in "sizing or dressing machines and looms, and in the machinery or apparatus connected therewith."

This invention consists in an improved system of splitting the sheet of warp in the dressing machine into several separate and distinct warps, and in the arrangement and construction of improved warp or yarn beams for sizing or dressing machines, looms, and similar purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 13.—N° 3448.

DALTON, Robert Arnold, and BARTON, George Samuel.—"A new manufacture of upholstery "trimmings woven of silk, worsted, and cotton."

Trimmings are woven of silk, worsted, and cotton in a ribbon loom, so as to obtain a fast edge or selvage on both sides.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 13.—N° 3449.

BROOMAN, Clinton Edgcumbe.—(*A communication from Jean Marie Lasché.*)—"Improvements in the "manufacture of hangings and coverings for walls and other decorative purposes."

The hangings and coverings are made by painting or coloring tin foil; these tin hangings or coverings are then applied to walls or other surfaces. Painting operations in houses may thus be dispensed with, and the usual inconveniences avoided.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 13.—N° 3450.

STEPHENS, John.—"Improvements in apparatus applicable to carriage wheels to facilitate the "draft."

This Provisional Specification relates to wheels which carry sections of rails or bearers and lay them along the course on which they travel. The connections between the bearers and the wheels are made of india-rubber or otherwise so that they can yield to the strains which come upon them.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 13.—N° 3451.

MARKHAM, Charles, and KNIGHTON, William.—"Improvements in apparatus for moulding "pipes and other cylinders."

This Provisional Specification describes apparatus for compressing sand into a cylindrical mould. The compressing of the sand into the mould is effected by a cone, which is caused to rise up in the mould as the sand is fed in at the top; the cone being suitably tapered to suit the solidity to be given to the sand.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 13.—N° 3452.

LAWSON, Thomas, and LAWSON, Arthur Tredgold.—(*Provisional protection only.*)—"Improvements in carding engines."

This Provisional Specification describes forming the shell of carding engine cylinders of wrought iron, either in one cylindrical piece or of several such pieces coupled together.

Also making a carding engine cylinder of a number of drums carried by an axis independently the one of the other.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 13.—N° 3453.

MARKHAM, Charles, and KNIGHTON, William.—"Improvements in apparatus for moulding and "drying moulds for pipes and other cylinders, and in withdrawing them from their moulds."

This Provisional Specification describes forming moulds for pipes or cylinders in boxes suspended from the outer rim of a turntable, and when moulded the table is turned to bring them into a store. The turntable is formed with long gudgeons or centres; the lower one is received in a block carried by a cross bar which extends over the top of the pit; on the top of this gudgeon is fixed an hydraulic or other crane to draw the pattern moulds and castings.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 13.—Nº 3454.

GOLD, Richard Alfred.—" Improvements in two-wheeled carriages or cabs."

According to this invention the driver's seat and the seat for the person or persons riding in the carriage or cab are situated over the axle so as to balance the weight carried by the carriage or cab, and relieve the horse from strain. The door of the carriage or cab is situated at the back of the body, and the driver's seat at the front of the body. The seat inside the carriage or cab is situated parallel to the axle, the person or persons riding in the carriage or cab facing the door at the back of the carriage or cab.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 13.—Nº 3455.

BURGESS, William. — (*Provisional protection only.*) — " Improvements in signal apparatus for the " protection of property and game."

The apparatus consists of a tube containing an explosive charge fitted to slide on an upright stem, and supported in position thereon by a trigger, at one end of which a weight is placed.

Supposing the weight to be released accidently by touching a string attached thereto the tube will fall and ignite the charge, it being provided with a nipple and cap for the purpose, which strike the base supporting the upright stem. In this manner an alarm or warning is given of the presence of thieves, poachers, or trespassers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 13.—Nº 3456.

DEBLON, Antoine Julien.—" An improved expansive, condensing, and rotary steam engine."

The principal features of novelty in this invention may be enumerated in the following order, viz.:—

1st. The steam cylinder or cylinder receiving the steam from the boiler is divided into a variable number of compartments, in which move a number of flyers or wings, which together form the piston of the machine.

2d. The employment of a hollow or drum cylinder with steam escapes, which receives its motion from the driving shaft either by means of gear wheels mounted on the said shaft or by any other or more convenient method. The crown of this cylinder is notched in as many places as there are wings to the piston and corresponding with them.

3rd. The disposition of a steam chest for directing the steam to the right and left of the wings of the piston.

4th. The employment of a circular slide valve which admits of getting rid of the steam, which would have a tendency to produce a counter pressure.

5th. The arrangement of two steam chambers at each end of the principal cylinder, fed by the steam chest before mentioned, and distributing the steam from right to left on the ½, or ¼, or other fraction of the course of the wings of the piston by the rotation of two circular slide valves.

6th. The arrangement of a segment of lid of the escape cylinder and to which is adapted a condensing pump for receiving the steam after working and conducting it to the condenser by means of a tube.

The whole machine is covered with a general casing furnished with valves for regulating the pressure of the steam introduced into the case for heating the organs of the machine.

The arrangement of the several parts mentioned as forming this new species of machine may vary without affecting the principle, and it may be worked by steam from water, alcohol, sulphuric ether, or ammonia, carbonic acid or petroleum.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 13.—Nº 3457.

JONES, Charles.—" Improvements in the treatment of sewage."

This invention has for its object the precipitation, dedourisation and utilisation of sewage, and consists in first precipitating the matters in the sewage by the application thereto of a mixture of slaked lime and shale oil. At the time of introducing the above mixture or directly after I sometimes introduce, according to the particular character of the manure required, either a solution of chloride of zinc, sulphuric acid, burnt clay, or magnesium, or a combination of any two or more of them.

In practically carrying out my invention I prefer to introduce the precipitating agents into the sewage

barrels. When one pinion only is used on each fork barrel, the internal wheel having of nece
number of teeth than the spur wheel imparts a more rapid motion to the forks.

My present invention enables me to vary the speed of the fork barrels in the forward and re
which is of great advantage in certain stages of hay making. I obtain this desirable effe
mediate or carrier pinion which can be brought into gear with the pinion on the fork barrel, a
the internal or the spur wheel at pleasure. When not required I withdraw this carrier pini
same simplicity is substantially retained, which is the characteristic of my former Patent.

The second part of my invention relates to a plan by which I construct a machine with
having two different speeds.

In the nave of each travelling wheel I place two internal cog wheels, one smaller than the
axle of the machine I mount an excentric cylinder on which the fork barrels revolve, and b
excentric cylinder round the axle I adjust the position of the pinions on the fork barrels, so
gear with either of the two internal wheels.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 14.—N° 3459.

GREEN, James Brodbelt.—(*Provisional protection only.*)—" Improvements in size
" paring yarn or warps to be woven."

The invention consists in using talcum of that particular quality known as fine French
with the size as a substitute for tallow or soap.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 14.—N° 3460.

MILLS, Thomas.—(*Provisional protection only.*)—" Improvements in steam generators."

Constructing the firebox of a boiler of a coil of tubing, and obtaining a perfect circula
through the same without the use of an injector.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 14.—N° 3461.

HARRISON, William.—(*Provisional protection only.*)—" Improvements in the constructio
" kilns for drying and firing or burning bricks, tiles, earthenware, or other similar mat
" apparatus connected therewith."

In carrying out my invention I construct the oven or kiln in the form of a long tunnel pr
chimney or flue at or near one end. The floor of the oven or kiln is provided with a tramway
which travel wagons which are made of sufficient strength to carry (say) two thousand bricks

These wagons are fastened together, and the interstices filled with earth or other suitable ma
cold air cannot pass upwards between them.

The sides of the wagons next to the walls of the oven are provided with longitudinal strips

This invention consists in arranging apparatus for perforating paper strips wherein a number of punches are acted upon by a lever through the intervention of a series of perforated plates arranged on the jacquard principle, so as to cause only such of the punches to be brought into action as are required for forming a particular letter or symbol.

In one arrangement the perforated plates are carried by a disc rotated by a handle moving round on the face of a dial, on which are marked the letters of the alphabet, so that by turning the handle to a particular letter the corresponding perforated plate for producing that letter is brought between the punches and the lever. In another modification the punches are carried in groups for forming each letter on the circumference of the said disc, and are brought under the lever as required.

The paper is fed forward by an arrangement of ratchet wheel and pawl, wherein the ratchet wheel is always moved to an extent corresponding with the length of the letter previously punched.

[Printed, 2s. 6d. Drawings.]

A.D. 1868, November 14.—N° 3463.

WORSSAM, George Jarvis.—(*Provisional protection only.*)—"A new or improved motive-power "engine."

The principal part of my invention consists in forming a chain of floats, passing over two sets of pulleys, one placed vertically above the other, similar to a chain pump; one half of the floats passing through a tank of water, the other half passing outside the tank, and each float is fitted with a cup leather. On the bottom of the tank a barrel or cylinder is fixed the same size as the cup leather of the floats, and conical at one or both ends, to admit of the free ingress and egress of the floats. Supposing the chain of floats to be in motion the floats would pass through the barrel or cylinder at the bottom of the tank, and would rise by their buoyancy to the top of the water and pass round the top pulley, outside the tank, and passing over the bottom pulley again enter the tank and so on. In some instances the leather may be fixed in the cylinder or barrel at the bottom of the tank so as to prevent any escape of water.

[Printed, 4d. No Drawings.]

A.D. 1868, November 14.—N° 3464.

BECKLEY, Robert, and HICKS, James Joseph.—"Improvements in means or apparatus for measuring "and registering the quantities of flowing liquids, which invention may be used as a rain gauge or as a "liquid meter, and for measuring the strength of liquor run off from a still or other apparatus or vessel."

For a rain gauge constructed according to this invention the rain is conveyed to a measuring chamber which is supported by a float working in a chamber having a suitable quantity of quicksilver therein. Through the the bottom of the measuring chamber is passed the longer leg of a syphon, the shorter leg of which nearly touches the bottom, whilst the bend is coincident with the top of the measuring chamber, and is contracted so as to ensure the rain passing away at a uniform level. The measuring chamber is guided in its motion so as to ensure its rising and falling in a vertical line and prevent its turning on its axis.

The measuring chamber carries a hood or cover to protect the chamber in which the float works from the entrance of any foreign matter, and a suitable marking instrument mounted on a spring is fixed thereto to mark upon a cylinder the rising and falling of the measuring chamber. This cylinder is mounted on an axis, to which rotory motion is given by a clock enclosed in an airtight case. The clock is wound by means of a handle mounted on a shaft passing through the entrance case, and the entrance of moisture into the clock case is prevented by a mercurial joint at such part.

When the clock stops the pendulum is again set in motion by means of a lever operated by a suitable axis passing through the clock case, and having a handle fixed thereon, so that by turning such handle the lever is caused to strike against the pendulum and set it in motion, a mercurial joint being employed to seal the part where such axis passes through the case.

The apparatus above described is by preference sunk below the ground, and the recording cylinder is made of ground glass or other material unaffected by moisture, and such cylinder is divided by preference into twenty four parts, so that by means of the curve or line produced thereon, the rain fall within any given time may be readily ascertained.

In some cases when very great accuracy of measurement is required an intermediate vessel is employed to receive the rain before it is allowed to fall into the measuring chamber, and a valve is placed in the bottom of such vessel, which is closed by means of suitable connections put in motion by the weight of the rain water passing out of the measuring chamber, and opens so soon as the measuring chamber is emptied.

The apparatus above described may be also used as a liquid meter. In dry situations the clock will not however require to be placed in an air tight case.

When it is only necessary to ascertain the quantity of liquid passing through the measuring c the recording cylinder and clock are dispensed with, and to the measuring chamber is att catch or driver which gives motion to a train of gearing giving motion to hands working around dials.

When the apparatus is employed for measuring liquors the strength or specific gravity of such liqu be ascertained by the depth to which the measuring chamber falls when full.

[Printed, 1*s.* Drawing.]

A.D. 1868, November 14.—N° 3465.

NEWTON, Henry Edward. — (*A communication from Alfred Colburn Loud.*) — " Improvem " propelling vessels."

The propeller consists of two circular discs mounted obliquely on the same shaft. The edges discs touch at one point, and thus the propeller presents the appearance of a circular wedge.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 14.—N° 3466.

TURNER, Archibald.—(*Provisional protection only.*)—" Improvements in the manufacture o " fabrics."

In order to produce a silk selvage the silk weft is drawn out round a separate selvage wire so longer than the cotton weft, which will be thereby covered.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 14.—N° 3467.

RICHARDSON, William.—" Improvements in condenser carding engines."

This invention consists in a method of doffing the material from the cylinder. For this purpose in conjunction with a grooved roller is employed.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 14.—N° 3468.

HOWARD, James, and BOUSFIELD, Edward Tenney.—" Improvements in the construct " tubular steam boilers."

The objects are to facilitate the removal from vertical tubular boilers of the scum that is thrown up water employed in certain localities, to improve the connections between the vertical and horizontal composing the boiler, and to facilitate the detachment and removal of any one or more of the vertical when required.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 14.—N° 3469.

BRADFORD, Charles Kempton.—" Improvements in velocipedes."

First, I employ two or more cranks of different lengths, the longer when ascending inclined plane more power with less speed is required, the smaller when traversing level surfaces and greater speed wi power is required.

Further, I employ a rope or chain for steering, applied directly or nearly so to the axis of st wheel.

I further make the rider's seat adjustable in height to suit the length of the legs, and vary the dista the rider from the driving shaft.

I further provide two notched bars on the platform of the vehicle connected to the steering axle by c ropes or chains for the purpose of guiding or steering the same.

I further swivel the steering axle to its perch or body by a universal joint.

I further, in three wheeled velocipedes, make the single wheel the driver and the rear two steerers. apply india rubber or other elastic material to the peripheries of the wheels for increasing their t power and to prevent jolting.

It further consists in making a series of notches in the hand driving levers for receiving the fulcru or bolt on which they work in order to adjust the leverage.

Also in communicating the power of said levers to the wheels by a friction clutch or clutches acti when the levers are moved in one direction, the levers being released when moved in the opposite dir so as to exert power by vibrations of the levers when convenient and avoid the dead point of the co crank motion.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, November 14.—N° 3470.

NALD, John Cameron, and CALVERLEY, Joseph.—" Improvements in the manufacture of ype printing surfaces, and in machinery for printing and receiving sheets of paper as they come he printing machine, and also for cutting into sheets rolls of paper."

'rovisional Specification describes apparatus for casting semi-cylindrical stereotypes plates of an kness at both ends, also supplying a continuous supply of ink to the inking rollers by a roller slowly in a trough of ink, and from which the ink is taken by another roller revolving nearly in herewith, and at a speed equal to the surface speed of the type. The excess of ink is removed roller, which revolves in a trough of ink by a knife with a true edge. The Specification also forming the distributing rollers, which are to equalize the film of ink, of metal also giving by positive revolving motion to those distributing rollers which have an endway as well as a revolving Also holding a roll of paper in a printing machine on an axis capable of being expanded after it introduced into the roll; also an apparatus for damping the paper; also a method of getting rid t off in continuous printing machines; also an improved arrangement of apparatus for cutting the o lengths; also an apparatus for receiving the sheets of paper as they come from such a printing

d, 2s. Drawings.]

A.D. 1868, November 14.—N° 3471.

, Henry.—" Improvements in treating iron ores or ironstones."

ature of novelty which constitutes this invention is the treatment of the ores or ironstones in a n which little or no oxygen are allowed to come in contact with them, and salt water or salt and used to neutralize and volatilize the sulphur or phosphorus contained in the ores.

d, 10d. Drawing.]

A.D. 1868, November 14.—N° 3472.

ON, John Henry. — (*A communication from George Granville Lobdell.*) — " Improvements in wheels."

vention relates to a peculiar construction of that class of railway wheels which are made entirely on, and the rims of which are hardened by causing the molten metal in casting the wheels to come t with cast iron which forms a part of the mould.

st part of the invention, which relates to the construction of spoke wheels in which both hub, rim, es are cast hollow, consists in arranging strengthening ribs within the hollow rim, and in making ed side of the rim straight, or nearly so, and at right angles or thereabouts to the internal ning ribs above referred to, the objects of this part of the invention being, first, the affording of for easily casting the hollow rim with its internal ribs; second, the obtaining an uniform chill and netration of the same; third, the attainment of strength where the greatest strength is demanded; th, the effecting an economical distribution of the metal composing the wheel.

cond part of this invention consists of a cast-iron railway wheel in which the hub and rim are l together, partly by two concavo-convex plates and partly by a single plate or web forming a tion of the said concavo-convex plates from the point where the two meet; also of an annular rib the inner circumference of the rim and forming a continuation towards the centre of the wheel of e, whereby greater strength is obtained. Strengthening ribs extend from the concave-convex plates erred to, and terminate at their outer ends upon the annular rib before mentioned.

jects of this part of the invention are similar to those mentioned in reference to the improved cast- e wheel.

d, 8d. Drawing.]

A.D. 1868, November 16.—N° 3473.

Y, Thomas.—(*Provisional protection only.*)—" Improvements in the mounting and working of ce and defensive armour, and in the construction forms and means of applying defensive armour, the forms and in the use of some parts thereof, and also in the construction and use of apparatus ecting the above purposes for the defence of ships and other vessels, forts, batteries, and other ations, and of ordnance in them and elsewhere where required, parts of which improvements are plicable to other purposes."

ies consist—1st. In portholes being formed of six, seven, or eight, or more armour blocks.

In improved forms of blocks for such and other purposes.

In additional interlocking parts, and of improved angles.

In particular forms and dimensions of various parts.

large areas of armour blocks [*and of shields* *].

16thly. In particular forms, positions, and effects of tie blocks and of capping blocks
the manner in which they fit down upon the blocks below them.

17thly. In an improved system of countersunk and of other rivets, and of tools for th

18thly. In a new system for making the roofs of fortifications and casements bomb she

19thly. In a form of collar for seating the head of my patent bolt.

20thly. In forms and dimensions of armour blocks for ships.

21stly. In means of giving support to the same.

22ndly. In certain apparatus connected with porthole covers and means of using the sa

23rdly. In means of keeping out bullets from glancing into rifle battery.

24thly. In several improved modifications of rifle battery.

25thly. In forms of blocks for a rifle battery and their effects.

26thly. In a preferred process of making blocks.

27thly. In the application of the same to other purposes named.

28th. In the construction, use of means of applying other defensive armour for
ordnance in battery and in ships, fortifications, and elsewhere, and in apparatus connected

[Printed, 6*d*. Drawing.]

A.D. 1868, November 16.—N° 3474.

BOWLER, John Cobb.—(*Provisional protection only.*)—" Improvements in the construc

The novelty of the invention consists in constructing the top or crown of the hollow
castors," movable in order that the surface against which the ball presses may adapt itsel
in which the furnature is moved.

Secondly, the novelty consists in adapting to the support of heavy furnature sliding incl
are capable when moved backward or forward by means of screws or other equivalent of
nature so as to be supported on the bowls of the "castors" or of lowering it so as to res
castors upon the floor.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 16.—N° 3475.

BONNEVILLE, Henri Adrien.—(*A communication from Ernest de Fornari.*)—" Imp
" shape and casting of missiles, and in the apparatus connected therewith."

These improvements relate to a missile of a novel and improved shape for piercing arm
and fortifications, to a novel and improved mode of casting the said missile, and to the ap
in operating this casting.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 16.—N° 3476.

SMITH, John.—(*Provisional protection only.*)—" Improvements in machinery or appara

A.D. 1868, November 16.—N° 3477.

'ER, **Henry**.—(*Provisional protection only.*)—"An improved apparatus to be employed for exhibition poses in connection with gas burners."

: novelty of the invention consists in the novel intermittant application to gas burners of a flattened of metal, known as the "hydrocarbon" burner, for the purpose of exhibiting the advantages to be d from the employment of such carbon burners and the reverse when not employed.

inted, 4*d*. No Drawings.]

A.D. 1868, November 16.—N° 3478.

TIN, **Thomas**.—(*Provisional protection only.*)—"Improvements in the means for supplying ammuni- and other objects to troops under action, and in cars or vehicles employed for that purpose which are applicable to other purposes, also a mode of packing such ammunition."

s invention consists in supplying reserve ammunition to troops under fire by means of light hand cars watertight body whereof the handle consists of a pioneer's spade and which carry a registering mecha- 'or indicating the distance travelled by the troops. The cars have a separate box containing lint and surgical requirements, and at the sides are fixed one or more hand saws, while on the cover are fixed s' tools. Cartridges are packed in pairs end to end with the cap ends against each other.

inted, 4*d*. No Drawings.]

A.D. 1868, November 16.—N° 3479.

EL, **Pierre Joseph**.—"An improved steam generator."

boiler is composed of a single serpentine coil (preferably of copper) communicating by its lower nity with a double metallic envelope, and by its upper end with a steam reservoir formed by an outer pe of iron, steel, or copper. The water is fed in at the lower part of the double envelope by means of pipe, fills the same, and then enters the serpentine coil at its lower end, in which it rises and escapes ts upper end in the form of steam into the steam reservoir which surrounds the whole apparatus.

furnace is placed below the serpentine, the coils of which are closed in such a manner as to form a ll round. The gases of combustion are compelled to pass upwards through the cylindrical envelope ormed and then descend between the exterior of the spiral and the interior of the double envelope and y a circular chamber (which surrounds the steam reservoir) to the chimney.

apparatus for burning the oil is composed of several concentric annular envelopes placed in a cylin- box constantly filled with petroleum or other mineral oil. In these spaces are placed wicks of th or asbestos, which dip into the oil, and the air passes between them and also through a central

inted, 10*d*. Drawing.]

A.D. 1868, November 16.—N° 3480.

IESON, **John**, junior.—(*Provisional protection only.*)—"Improvements in dyeing and washing yarns, in apparatus therefor."

s invention has for its object to economise labor and materials in dyeing and washing yarns, and ts in effecting these operations on the yarns by means of apparatus such as is at present used for and washing Turkey red cloth, the hanks of yarn being connected together to form chains by means s of brass or other suitable material.

inted, 4*d*. No Drawings.]

A.D. 1868, November 16.—N° 3481.

ST, **Edward**, and PRIEST, **Allen**.—(*Provisional protection only.*)—"Improvements in carding ines technically known as 'scribblers' or 'breakers.'"

novelty consists in,—

application of a card roller to work in near contact with the first doffer to take off the bits of rag, knots of fibre, or other hard objectionable substance.

inted, 4*d*. No Drawings.]

A.D. 1868, November 16.—N° 3482.

G, **Edward**.—"Improvements in machines for straightening and planishing rolled iron."

iron is passed backwards and forwards through steel or chilled cast iron frictional rollers of the shape ed, and the rollers are arranged with a pair of horizontal rollers in the centre and a pair of vertical rollers at each side of them. Jets of water are applied round the outer surface of the iron whilst being caused to pass to and fro through a perforated tube, on to which water is caused to fall as r

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 16.—N° 3483.

HARE, James.—"Improvements in the manufacture of apparatus for expanding tables."

This invention consists in making the hollow screws of apparatus for expanding tables by fo screw threads upon the tubes by compressing the metal of the tubes into the required form by process or otherwise, instead of cutting the screw threads out of the substance of the metal of the commonly practised.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 16.—N° 3484.

McNIEL, Andrew, and WHEATON, William.—"An improved process for the manufacture "ammonia from ammoniacal gas liquor."

The ammonia is extracted from the liquor by gypseous red marl with the addition of common s

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 16.—N° 3485.

BONIWELL, Rufus Martin.—"Certain improvements in the construction of river boats "machinery attached to the same for propelling them by manual power."

This invention relates particularly to the conformation and construction of river boats to be pro manual power, so that the person or persons propelling such boats can sit at ease with their face the bow of the boat, working the paddles either with their feet alone or with their feet and hand bination, such arrangements being applicable to either single boats or double boats in combination, twin boats. The whole being a combination of parts in construction entirely new.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 16.—N° 3486.

LOW, William, and THOMAS, George.—"Improvements in suspension bridges."

This Provisional Specification describes forming compound chains for suspension bridges by com a number of chains with oval links. The chains are placed side by side, and filling blocks are dri through the alternate corresponding links of the several chains.

[Printed, 6*d.* Drawing.]

A.D. 1868, November 16.—N° 3487.

CAMPAIN, Samuel William.—"Improvements in apparatus to be used when tilling or working "by steam power."

According to this Provisional Specification the anchor carriages used when land is being tilled by power have revolving anchors mounted upon them to restrain the forward movement of the carriage wheels of the anchor carriages have radial spikes upon them. Or instead of having wheels the carr provided with side plates of a semi-circular or other form which may be caused to cut more or les the land.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 17.—N° 3488.

JONES, John, and BIDDER, Samuel Parker, the younger.—"Improvements in apparatus for bre "down coal, slate, stone, and other minerals."

This invention consists in breaking down coal, &c. by apparatus wherein two or more wedges are consecutively by hydraulic or screw power between the surfaces of the material to be broken down. F purpose two tension bars are inserted into the hole cut in the coal, between which is placed first a cl box and then two pressing blocks, between which the wedges are consecutively forced by the ram hydraulic press attached to the tension bars, or by a screw spindle. This particular arrangement of app is also claimed for driving one single wedge. The pump to the hydraulic press may be formed in one with, as also a receptacle for containing the requisite water.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 17.—N° 3489.

VILLE, Henri Adrien.—(*A communication from Jules Malacrida and Pierre Boudet.*)—" A new proved instrument for prognosticating the weather."

vention relate to an instrument for prognosticating the weather, based upon the principle that the s of the air are condensed or expanded under the influence of variations of temperature.

d, 8*d*. Drawing.]

A.D. 1868, November 17.—N° 3490.

, Robert.—(*Provisional protection only.*)—" An improved method or means of covering telegraph mployed under water."

vention consists in adapting and employing an exterior tubular covering or casing of suitable and strength, which is proposed to be manufactured of lead or other soft or suitable metal, inside vering or tube is enclosed or contained the telegraph wire or wires, covered or surrounded with the insulating medium of india rubber or other suitable insulating substance, the wires and insulating fitting tightly inside the metallic covering or tube.

be evident that one or more series of such tubular coverings or casings may be employed when

d, 4*d*. No Drawings.]

A.D. 1868, November 17.—N° 3491.

N, George Henry. — (*Provisional protection not allowed.*) — " Improvements in apparatus for g or fastening window sashes."

pparatus is to be fixed to the top and near one side of the lower sash. It consists mainly of two for each sash. The bolt for securing the lower sash is parallel to the top bar of this sash, and is by a pin working in a slot in the bolt and carried on a pivoted arm. The bolt for securing r sash is bent, and is operated by a pin on the other bolt working into a slot therein. When ed arm is moved forward the pin thereon pushes the bolt of the lower sash outwards, and this ts movement pushes out the bent bolt; the bolt of the lower sash takes into notches in the pulley n the window frame, and the bolt of the upper sash takes into notches in the upper sash. The ure both sashes whether closed or open. To secure the pivoted arm in its forward position it is t its back end to a spring, and a notch is made in the top plate of a box which contains the s the arm is moved forward a pin thereon bears against a curve on the top plate, thereby stretching g, but on reaching the notch the pin takes therein. This mode slightly modified applies to sash s in the ordinary position.

d, 4*d*. No Drawings.]

A.D. 1868, November 17.—N° 3492.

ICHARD, Gérard, Marquis of. — " Improvements in machinery for transmitting motion and arting power by liquids of different densities, such as water and mercury."

achinery forming the subject matter of this invention consists in the employment of liquids, put n in pipes, to transmit power by reason not only of their incompressibility, but also of their

ontaining valves are employed in connection with a U shaped tube, the lower portion of which is mercury, on which columns of water rest; pressure and suction are alternately applied to the of water, and the liquid is expelled through the exit orifice. Sometimes double liquid rods are to make the machinery double acting. The invention is applicable to the raising of water, to achinery, and for all purposes where power is required.

d, 8*d*. Drawings.]

A.D. 1868, November 17.—N° 3493.

, James Edward Henry, and LUMLEY, Thomas.— (*Letters Patent void for want of Final ion.*)—" Improvements in chimney pots."

rovisional Specification describes forming numerous openings through the sides of chimney pots and the opening at the top of the pot by a conical cover which has a guard plate supported at a distance

d, 4*d*. No Drawings.]

A.D. 1868, November 17.—N° 3496.

MANSFIELD, William.—(*Provisional protection only.*)—"Improvements in kilns and
" or sheds to be used in the manufacture of bricks and other articles made of clay."

This invention relates to such kilns as consist of a series of ovens arranged in an annular
therefrom conveying the waste heat to a central or other stack. The annular space betwe
the stack is usually filled up with earth. This invention consists in making the said ann
series of drying chambers or sheds in which the bricks or articles are dried preparatory to
the adjacent ovens, the said drying chambers being heated by the waste heat from the ovens.

Access to the drying chambers is obtained either from the roofs or by horizontal passages

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 17.—N° 3497.

CLARK, Alexander.—(*A communication from Daniel Morey Holmes.*)—"An improv
" making ginger and other snaps from soft dough."

In this machine the dough is placed in the dough box after raising the follower contain
latter is then brought down slowly by the aid of screws and wheel gearing, forcing the do
the orifices in the bottom of the dough box to form snaps of the desired size. The protrudi
cut off in slices or cakes by the forward and backward movement of knives, the frame of whi
tailed grooves in the bottom of the box.

The snaps as they are cut off drop into pans placed upon an endless travelling belt or apro
they are carried forward are removed by the attendant.

[Printed, 10*d*. Drawings.]

A.D. 1868, November 17.—N° 3498.

KEHDE, Henry Adolph.—(*Provisional protection only.*)—"Improvements in appar
" railway signals, points, and switches."

Over a chain drum I pass a chain connected to the rods by which the signal is operated,
of which chain is attached a counterbalance weight. On the axis of the drum on either sid
crank lever. One extremity of each lever being provided with a pall engaging with a ratch
on either side of the drum, by means of which the drum will be moved with the oscillating
connected to the ordinary hand lever) in either direction for working the signal. The pawls
from the ratchets when at either end of their course, so as to leave the chain wheel free and
expansion or contraction of the chain of rods communicating with the signal or switch, which
this invention.

By another arrangement I mount the chain drum on a movable carriage, to one end of wh
the chain of rods, and to the other the counterbalance weight. The chain wheel has spu
with a rack fixed to the ground, so that on the bell-crank levers being oscillated the carriage
and thus operate the signal. These levers communicate with the hand lever by means of a
the carriage so arranged as not to interfere with the free motion of the same by the expansion

A.D. 1868, November 17.—N° 3499.

RICHARDSON, Charles.—" Improvements in looms for weaving."

This invention relates to improvements in looms for weaving, in which the shuttle is driven across the loom by a current of air acting directly upon such shuttle, and consists partly in attaching one end of the collapsable bag, and for the driving the shuttle across the loom to the back or inner side of the sley beam or shuttle box and attaching the other end of such collapsable bag to the end of a lever, the fulcrum of which is at or near the centre of the swing rail or rocking axis of the sley beam, such lever being so formed as to be acted on by a stud or surface mounted on a wheel or shaft, and so collapse the bag and drive the shuttle, the said lever being so arranged that opposing movements cause the bag to be quickly collapsed and a stud bracket, or projection is arranged in such a position to act upon the said lever and and ensure the expansion of the bag. The shuttle box is provided with a spring pawl catch, locking or holding instrument actuated by the said lever so as to hold the shuttle in its box for a short time after the said lever has begun to collapse the bag.

Another improvement consists in arranging and combining what is known as "frog pawl" with the shuttle box in looms where the direct action of air is employed for driving the shuttle, so that if the shuttle does not arrive at its box the "frog pawl" will act as is well understood to stop the loom.

In looms where the air for acting upon the shuttle is compressed in or driven out of a chamber mounted upon any part of the loom except the sley beam or shuttle box, whether the air be stored up in a chamber and released from time to time or be compressed each time the shuttle is driven across the loom, and in looms where the air for acting upon the shuttle is compressed in an apparatus separate from the loom, and supplied to the loom for the driving the shuttle as regard.

According to another improvement spring pawl catches are employed or other locking or hold instruments mounted upon each of the shuttle boxes or the sley beam of the loom, and so actuated as to catch or hold the shuttle on its arrival in its box, and retain it there until after the air has begun to act upon the shuttle, and so that when the shuttle is released the air will at once act with its whole force to drive it across the loom, suitable recesses being formed in the shuttle where a pawl or catch is employed as the locking instrument.

[Printed, 2*s*. Drawings.]

A.D. 1868, November 18.—N° 3500.

PRICHARD, John Moreton.—(*Provisional protection only.*)—" Improvements in reservoir or fountain " penholders."

My invention relates to pen-holders constructed to carry within them a supply of ink which in writing can be caused to flow freely to the pen or nib, but which will not flow spontaneously from the holder, so that the same may be conveniently carried in the pocket or deposited upon a table or desk without soiling or injuring the same from the escape of ink. The pen is fixed in a small tube, which is inserted in the end of the reservoir. The end of the tube is left open or is perforated. The sides of the tube are made to fit air tight in the reservoir preferably by a coating of india rubber, or the pen may be inserted directly into the reservoir, which is then provided with a perforated partition or other means for regulating the flow of the ink. It may sometimes be necessary to provide the aperture in the reservoir with a tongue or strip or other device to regulate the flow of the ink to the pen. A portion or portions of the reservoir must be made of some compressible substance upon which pressure is exerted to cause the ink to flow to the pen. The reservoir may be filled through the end where the pen is inserted or through any other convenient aperture.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 18.—N° 3501.

SIEMENS, Charles William.—" Improvements in apparatus for fastening and adjusting telegraphic line wires."

This invention consists in securing telegraph line wires by means of a cam or excentric turning on a pin between two studs or grooves, and so formed that when the cam is in one position it allows the wire to pass freely between it and the studs, while when turned into another position it bends the wire down between the two studs or grooves so as to hold it securely. Or the cam is made to nip the wire directly against an opposite surface.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 18.—N° 3503.

BROOMAN, Clinton Edgcumbe.—(*A communication from Henry de la Thibaudier*
protection only.) — " An improved liquid or composition for oiling or greasing wool
" materials."

Common fucus is boiled in water and then filtered; the fucus juice thus obtained is m
soda and oil, and well stirred to produce saponification. The unctuous liquid thus obtaine
oiling or greasing textile materials. The root of the mallow may be substituted for
inferior.

[Printed, *4d.* No Drawings.]

A.D. 1868, November 18.—N° 3504.

WARD, Frederick Oldfield, IBOTSON, William, and SOUTHBY, Anthony Gap
" ments in operations and apparatus for drying down alkaline solutions of extractive m
" preparing vegetable fibrous materials for use in the manufacture of paper, and in recover
" from for re-employment."

The features of novelty constituting this invention are expressed hereunder in the most
at our disposal, and in the most clear and accurate manner that our present experienc
employ, subject to the more detailed developments and final definitions of our complete sp

These improvements may be shortly stated to consist,—

Firstly, in evaporating such liquor by means of the heat afforded by the regulated supply t
in a suitable sole or fire place of the hydro-carbonaceous matters which such liquors hold
effect being to supersede, partly or wholly, according to the greater or less dilution of the liq
of coal or other extraneous fuel for its desiccation.

Secondly, in separating from the liquor, under treatment to that end, either continuousl
intervals, its said self contained fuel so fast as this solidifies to a crust or deposit coh
removal.

Thirdly, in applying this liquor-derived fuel in one or other of the following ways
feed a fire so disposed as to heat a series of shallow liquor-trays or recepticals superpo
in such manner that the heat may pass over and under them in succession, the first of
being fed by a regulated influx of the liquor for treatment, the second by a regulated
first, and so on, each receiving a more concentrated supply till solidification commence
matter is removed from the liquid to a succeeding receptacle, where it undergoes further
finally advanced to the sole or fire place, in which it takes fire and is concentrated. This
facilitated (1) by forming the recepticles with an inclined lip or border adapted to retain
facilitating the separation therefrom of floating crust; (2) by forming the recepticles of
with iron, wrought or cast, for the readier removal or scraping off of adherent deposit; (3),
the said separating of solidified matters from the liquor, power-driven apparatus of the

employed to produce air-currents for the preliminary concentration of the liquor, its self supplied fuel being burnt only to complete the desiccation, thus leaving an excess of fuel available for other heating purposes.

(*Fourthly*), in obviating the diffusion of odour from the liquor during its evaporation and concentration by condensing the fumes with water or passing them through fire, the former of which objects may preferably be accomplished by a water fed power, as is well understood; while the latter may be attained, as regards the emanation of the solidified matter, by raking this into a recepticle with a vent to some fire place, preferably the fire place of the apparatus, wherein such emanations may be consumed.

(*Fifthly*), in obviating the progressive contamination of the recovered ash, through the accumulation therein of extraneous neutral salts, by dissolving the said ash in water and "salting out" the said extraneous ingredients from the solution in any of the ways in use among chemists for that purpose.

(*Sixthly*), in utilising waste heat, such as, for instance, waste chimney-heat, to further economise the self-supplied fuel of the liquor, by effecting a preliminary concentration, more or less considerable, thereof; the waste heat being applied to this end either by passing it over or under shallow recepticles of the liquor in the manner above described, or through tubes traversing the liquor as is well understood, or in any other suitable manner, the draft to effect this being obtained in any usual way, as, for instance, by the draft of the hot gases themselves or by a fan or ventilator.

(*Seventhly*), in further economizing artificial heat of all kinds by employing spontaneous evaporation, under the influence of the sun and the atmosphere, to remove vapours from surfaces of the liquor, exposed for that purpose during the day time, but kept covered from the counteracting deposit of dew between sundown and sunrise of successive days.

(*Eighthly*), in combining together such of these modes, two or more, as local or other circumstances may indicate, in each special case, as forming the most economical and suitable group, or a series of operations available in that case to the end in view.

[Printed, 1*s.* 8*d.* Drawings.]

A.D. 1868, November 18.—N° 3505.

WILKIN, Marmaduke, and CLARK, John.—(*Provisional protection only.*)—"An improved lamp for "lighting mines."

1st. Separating coal from the seam by confined water and also by an iron pin furnished with barbs.

2nd. Supplying lamps for lighting the mine with pure air.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 18.—N° 3506.

McDOUGALL, Arthur.—"Improvements in the manufacture of phosphatic manures and sulphate of "ammonia."

My invention consists of an improved combination of processes for the production of soluble superphosphates of lime and sulphate of ammonia.

I take animal charcoal, or the substitute for animal charcoal described below, and treat it with sulphuric acid and then separate the sulphate of lime so produced from the solution of acid phosphate of lime by filtration or other convenient means. I then agitate this sulphate of lime with ammoniacal liquor resulting from the destructive distillation of carbonaceous substances. By this means I obtain sulphate of ammonia, which I separate from its solution by evaporation. I also evaporate the solution of acid phosphate of lime with a proper proportion of tribasic phosphate of lime until upon cooling, it crystallises as a superphosphate suitable for manure or other purposes in the arts.

I also prepare a product, which I can use as a substitute for animal charcoal in the above process, by taking substances in a fine state of division containing phosphate of lime, and mixing with small coal or pitch or other carbonaceous substances and submitting the mixture to the action of heat in closed vessels.

By the foregoing combination of processes I make the sulphuric acid do double work. First, to produce soluble phosphates, and then to unite with the ammonia contained in the ammoniacal liquor to form sulphate of ammonia.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 18.—N° 3507.

DRAYSON, Alfred Wilks.—"An improved mode of and apparatus for cooling wort and other "liquids."

This invention relates to the cooling of liquids by applying thereto the cold produced by evaporation, which is induced or expedited by the aid of artificial currents of air.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 18.—N° 3508.

BELL, Benjamin.—(*Provisional protection only.*)—"Improvements in the construction of iron ships for the purpose of affixing their sheathing, and in the mode or means of affixing their sheathing."

The chief features of novelty in this invention are,—

I. The use of a strip or narrow plate interposed between the inner and outer plates where the outer plates overlap, so as to increase the depth of the hollow space between the strakes of outside plates, and the filling of the increased hollows thus formed with wood or other material, so that the zinc or other metal sheathing may be secured mainly to such filling.

II. The forming of such hollow spaces of increased depth where the inside plates are brought close together by the use of an outside butt plate or strip of increased thickness, and the filling of the increased hollows thus formed in the manner and for the purpose hereinbefore mentioned, that is to say, in the section of this abridgment marked I.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 18.—N° 3509.

GROUNDWATER, William Lyell.—(*Provisional protection only.*)—"Improvements in machinery or apparatus for inserting and extracting the percussion caps of cartridges for fire-arms, and for shaping and crimping the shells or cases of the same, more especially designed for renovating discharged cartridges."

My invention relates to portable apparatus or machinery for capping central fire cartridges, for removing the exploded cap from the shells or cases of cartridges which have been fired, for restoring the form of such shells or cases, and for re-capping the same. This apparatus or machinery is arranged and secured upon a table which also forms a case wherein the said apparatus may be conveniently enclosed for transportation. After a cartridge has been fired the exploded cap remains in the base of the cartridge shell. The first operation therefore is to remove the said cap. For this purpose I employ a hollow rod whereon the shell is placed, a needle being fitted to work inside the said rod for forcing the cap out of the shell, which needle is operated by a lever, while the shell is supported against the pressure of the needle by an adjustable stop. This needle is carried on the end of a rod constructed with spring jaws, between which the needle is inserted and held. A screw thread is formed on the exterior of the jaws, and a nut is fitted thereon; by screwing this nut up or down the jaws are slackened or tightened as desired. The second operation is to restore to the shells or cases their proper diameter, which is increased by expansion at the firing of the cartridge. For this purpose I employ a male and female die corresponding with the correct diameter of the interior and exterior of the shell. These dies are arranged under a sliding rod which is forced down upon the shell by a lever. The case or shell being thus restored to its proper form, the charge and projectile are inserted by any suitable apparatus ordinarily employed for the purpose, and the next operation is to crimp or channel the shell around the projectile to secure the same in the shell. This operation is effected by means of adjustable dies which are fitted within a box or holder, and are arranged in combination with a ring formed with cams or projections, by turning which ring the said dies are caused to approach each other and act upon the cartridge case. The last operation is to insert the percussion cap in the cartridge case. A die in which the cartridge is inserted is made removable, the base or stand of the machine being provided with a hole or aperture to receive the said die. From one side of the said aperture I form a guideway which is widened at its exterior or mouth. The die containing the cartridge is brought to the mouth of the guideway, which conducts it to the central aperture of the base. The said aperture is provided with a tube leading downward to prevent accidents from the explosion of the caps. The die having been properly adjusted a sliding rod is forced down upon the cap, which is thereby secured in the base of the cartridge.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 18.—N° 3510.

BASSETT, William Thomas.—"Improved means or apparatus for washing, cleansing, and dressing sheep or other animals."

This invention has for its object the arrangement of apparatus by means of which sheep or other animals can be more quickly and effectually washed than hitherto with great economy in time and labour.

The apparatus for carrying out this invention may be of a stationary character, or it may be so constructed and arranged as to be capable of being moved from place to place on land in trucks or otherwise as required or it may be mounted upon pontoons or otherwise arranged so as to be capable of being floated from place to place and worked either on land or water.

The animal to be washed is taken when either on land or in water and secured (by preference when in the water) to travelling bearers and yokes and carried through the apparatus, and it is preferred to secure the animal to such travelling yokes when laid upon its back. Adjustable collars, clips, or other suitable contrivances are provided attached to the travelling bearers, by means of which the neck or other part of the animal is held in the desired position while being carried through the apparatus, and it is preferred to mount the travelling bearers and yokes upon endless chains or ropes, though they may be otherwise mounted and actuated according to this invention; such chains or ropes passing around chain or other wheels to which movement is imparted by means of suitable driving wheels or pulleys so as to cause the chains and bearers and yokes to travel and carry the animal through the apparatus.

After the animal has been secured as above described it is carried by the travelling bearers and yoke to be washed by means of powerful jets or streams of water, so arranged as to act upon all or nearly all the parts of its body, and it is preferred so to arrange the apparatus that such jets or streams of water will issue from one or more annular or other suitably formed water chambers, so arranged that the chains and travelling bearers with the animal under operation will pass through the central space and be surrounded by the annular or other formed water chamber, from which a powerful annular or other formed stream, or a series of jets will issue from suitably formed apertures or orifices, and act upon all or nearly all the parts of the body of the animal under operation, and I prefer to direct the jets or streams of water towards the head of the animal so that they will penetrate to the root of the wool or hair and effectually cleanse the fleece through. According to this invention the water may be otherwise directed upon the animal.

Below the yokes or bearers travelling belts, rollers, or surfaces are arranged to assist in supporting the animal while being carried through the apparatus, and any parts of the apparatus with which the animal may be brought into contact are provided with buffers or guides.

After the animal has been carried through the apparatus the yoke or clip is so arranged as to release the animal.

It will be readily understood that the apparatus above described may be greatly varied, and may be employed according to this invention for applying dressing or other liquids to the skins or fleeces of animals for the treatment of scab and other diseases.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, November 19.—N° 3511.

HOSKOLD, Henry Davis, and WHEELER, George Printy.—" Improvements in the manufac-" ture of artificial fuel."

The preparation of blocks from coal, coal dust, lime coal slack, culm, and other bituminous substance ground fine, and during the process of grinding coal shale clay, & by preference the shale usually associated with coal. To these are also added a vegetable glue, resin, asphalt, or compact natural bitumen.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 19.—N° 3512.

FOSBERY, George Vincent.—(*Provisional protection only.*)—" Improvements in breech-loading fire-" arms and cartridges for the same."

My improvements relate mainly to fire arms whose breech is closed by a block which slides vertically across the aperture at the rear of the barrel, and the said improvements consist chiefly in the combination of the said block with peculiar devices for depressing and raising the block for exploding the cartridges and for ejecting the exploded cartridge shells from the piece.

The block slides in vertical grooves in the breech chamber, and is raised or depressed therein by a lever pivotted at the rear of the said chamber. The firing pin extends through the block and lever. The block and lever are depressed to open the breech, and the empty cartridge shell is ejected and the piece cocked by one movement of a sliding extractor bar, which is arranged at the side of the breech chamber. A stud on this sliding bar works in an inclined slot or passage in the lever, and acts as a cam to raise or depress the same. The mainspring is attached to the under side of the block lever, or when the lever itself forms the breech block or stopper the spring may be fixed directly on the block. The lock is provided with a hammer which, by means of an ordinary trigger is caused to drive forward the firing pin. The block lever is sometimes provided with a plate which is caused by the extractor bar to start the pin from the base of the shell.

My improvements also relate to cartridges which are constructed with a metal disc at the base, provided with a percussion cap and anvil. Over the cap I place a thin cover of sheet brass or copper, under which the cap is so arranged as to be readily ignited by the blow of the firing pin. The said cover is drawn over the metal disc to receive the tube or body of the shell. The projectile of my improved cartridge is formed with a collar or projection which fills the grooves formed by the rifling in the barrel. The diameter of the portions of the bullet on each side of this collar fit the bore of the barrel, the diameter being slightly tapered and reduced towards the near end of the projectile. This reduced end is expanded by the explosion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 19.—N° 3513.

CRIGHTON, Spencer, and TAFT, John.—" Improvements in machinery or apparatus of grinding " cards of carding engines, and in the method of lubricating the bearings in the said apparatus, applicable " also to the lubricating of the bearings of other machinery."

This invention relates principally to the machines employed to grind the card clothing of carding engines. A grinding roller revolving on its axis and traversing to and fro from end to end of the card roller, flat, or cylinder is employed, but in place of the said roller being arranged with its axis parallel or nearly parallel with the direction of traverse, and with the axis of the card roller being ground, the said roller is arranged with its axis at right angles or at a suitable angle therewith, and has a to and fro motion in the direction of its axis. In another form of machine a revolving disc is employed to grind the cards, the said disc being traversed from end to end of the card roller. In some cases two or more grinding rollers or surfaces are combined in one machine. The bearings are lubricated by means of revolving oil drippers, each one of which encloses one end of a bearing, and as the dripper revolves the oil is carried round and falls back into the bearing, or is conducted therein by a guide. This arrangement is also applicable to the bearings of other machinery.

[Printed, 1*s*. Drawing.]

A.D. 1868, November 19.—N° 3514.

THOMPSON, William.—" Improvements in cases or boxes for packing bottles and jars."

This invention consists in constructing packing cases with false bottoms or false covers, or both, which are acted upon by springs so as to cause them to press against the ends of the bottles and thus to hold them securely; or the springs may press directly against the ends of the bottles. The cases are fastened by straps with eyes at one end and hasps at the other, through which eyes a bolt is passed and secured by a padlock.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 19.—N° 3515.

ABEL, Charles Denton.—(*A communication from Claude Brison.*)—" Improvements in the manufacture " of phosphorus and amorphous phosphorus, and in furnaces and apparatus employed for that purpose."

This invention consists in making phosphorus and amorphous phosphorus in furnaces arranged similar to blast furnaces. These are charged with alternate layers of phosphate of lime and coke or charcoal, and the vapours of phosphorus are caused to pass from the chamber at bottom where the materials are fused into recipients and condensing chambers.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 19.—N° 3516.

CARRIGG, Henry.—(*Provisional protection only.*)—" Improvements in the manufacture of tribasic " phosphate of lime and the application thereof to certain useful purposes."

This invention consists in the manufacture or production of tribasic phosphate of lime from horn piths or solid bone or other osseous substances by decomposing them in diluted hydro-chloric acid and afterwards precipitating the phosphate with slaked lime. The phosphate thus produced the inventor uses with great advantage for cupelling, flint glass making, polishing plate, and similar materials, and also for phosphatizing flour, sweetmeats, and similar articles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 19.—N° 3517.

AVERY, William, and FENTON, Albert.—" Improvements in needle cases."

This invention refers to various improved methods of constructing needle cases whether formed of paper, metal, or other suitable material, and for containing one or more packets of needles, the object of the improvements being to securely fasten up the needles in the case with a ready means of opening or closing the same.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 19.—N° 3518.

WEBB, THOMAS GEORGE.—(*Provisional protection only.*)—" Improvements in the manufacture of tumblers, " goblets, wine glasses, and other vessels of glass."

This invention relates to removing that portion of a glass vessel which has been attached to the blowing iron. This is accomplished by causing the article to revolve in contact with a diamond. Another method consists in applying a heated wire to the part to be severed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 19.—N° 3519.

JONES, DAVID, and JACKSON, JAMES.—" Improvements in apparatus for imparting heat to the feet " and body whilst travelling or otherwise."

These improvements relate to apparatus upon or within which the feet of persons can be placed for imparting warmth when travelling in railway or other carriages, or when seated in churches or in other situations in which the feet and body are liable to become chilled, the apparatus being heated by means of the flame of a lamp or candle burning within it.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 19.—N° 3520.

McGRATH, JAMES.—(*Provisional protection only.*)—" Improvements in shirts."

This invention consists in applying to shirts a breast or front having a band or plait of the same or some different material or pattern so arranged as to imitate the appearance and dispense with the use of a neck-scarf. The outer ply of the band or plait rises in a tongue over and to the top of the neck band, to which it is fastened by a stud or pin or imitation thereof.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 19.—N° 3521.

GREEN, JOHN.—" Improvements in the manufacture of rope, cord, twine, yarn, and thread, and in the " machinery therefor."

This invention relates to the scouring, washing, and drying of ropes, cords, twines, yarns, and threads, and consists in drawing those materials over or under a series of adjustable grooved bars or pulleys at intervals outside a large rough drum or cylinder revolving rapidly and coming into contact with the materials, which are then drawn through water and over or under rubbing or polishing rollers, and between sizing rollers covered with elastic or other clothing, and afterwards over one or more heated chest or chests curved and grooved longitudinally.

Reels with six or more arms connected at the outer end with each other by blocks or stays and furnished with snugs holding longitudinal bars, one or more of which may be adjustable, receive the material in a finished state, and are made to serve the purposes of drawing rollers.

For the coarser qualities of the same materials I immerse the bobbins containing them in water, and from that draw them between a pair of tension rollers and into contact with two or more carding cylinders at different points, passing them through a trough or troughs of water between the points of contact therewith, after which they may be wound on reels or passed through the process above described subsequent to the contact with a large drum or cylinder.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 20.—N° 3522.

BAYLEY, EDWARD HODGSON.—(*Provisional protection only.*)—" Improvements in carts or other vehicles " for the removal of snow from streets, roads, and other places, and in apparatus connected therewith for " melting the said snow and disposing of the water thus produced, the said carts being able to be applied, " if required, to other useful purposes."

This invention consists of a cart, mounted as a water cart, and having a wrought iron water tank, together with a hopper for the reception of the snow, and a suitable heating apparatus. The snow is shovelled into the hopper, thereby coming into contact with the flues of the heating arrangement (and after a short time with the warm water in contact with the flues), and passes off through a large tank pipe (the mouth of which is above the level of the flues) into the tank, whence it is drawn off either by the ordinary branch pipe and distributor, or by a specially constructed sluice valve and hose.

The hopper may be fixed entirely over the top of the cart, or simply over the back part, the furnace being in each case under a projecting portion of the hopper. A sieve may be fixed above the flue surface in the hopper if required. The improvements of No. 889 (A.D. 1866) may be used in this invention. Felt or composition may be employed to prevent waste of heat.

Other equivalent arrangements of the apparatus may be made, and salt (chloride of sodium) or other chemical may be used to facilitate the melting of the snow, and be regained by chemical processes or not.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 20.—N° 3523.

McGLASHAN, JAMES.—" Improvements in apparatus for untwisting ropes."

The improved apparatus comprises a tube, into one end of which the rope to be untwisted is entered, and which is mounted in bearings in the framing, being made to rotate therein by means of a toothed driving wheel gearing with a toothed wheel fixed upon it. In gear with the same driving wheel or with a second driving wheel of a slightly different size there is a toothed ring loose on the tube, which ring revolves at a rate slightly different from that of the tube, and which by means of skew bevil teeth drives a bevil wheel on the spindle of one of a pair of small rollers carried by the tube. The two rollers are placed in a plane at right angles to the tube's axis, and the rope passes between and is nipped by them. The slight differential motion of the loose ring which is imparted to one of the rollers, as described, causes the rollers to feed the rope gradually through, whilst as they are carried round by the rotation of the tube they untwist it as it passes.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 20.—N° 3524.

HOPKINS, JOHN DOUGLAS.—" Improvements in apparatus for opening and closing window sashes."

The suspending cords of window sashes are wound round wheels or cylinders under the sills, the wheels being operated by gearing worked by a handle.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 20.—N° 3525.

BURNS, DINNIS.—" Improvements in chemical compounds to be employed in treating diseases of the " generative organs."

The feature of novelty which constitutes this invention is the combination of substances in forming lotions and decoctions and injections to be administered in cases of syphilis, seminal weakness, nervous debility, spermatorrhœa and gonorrhœa.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 20.—N° 3526.

GUTHRIE, ALEXANDER.—" Improvements in ploughs."

The feature of novelty which constitutes this invention is the construction of ploughs, in which the leading wheel is adjustable by a crank arm actuated on a tangent screw and worm wheel in conjunction with a shaft and handle at the back of the plough frame. The hind wheel is carried in a bracket, and the side wheel on a lever, both bracket and lever being adjustable.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 20.—N° 3527.

LEYKAUF, ANTON.—" The manufacture of a new or improved colouring matter."

The colouring matter is manufactured by employing manganese or its compounds and ammonia or its salts or compounds together with phosphoric acid or phosphorous or compounds of the same. Iron or an oxide or other compound of iron may be added for certain shades. The process may be performed by taking pure manganese or the cheap residuary compounds of manganese from the preparation of chlorine and mixing it with phosphoric acid. It is heated till liquefied. After cooling the manganese is precipitated by ammonia or carbonate of ammonia, and is poured with the liquid flowing from the coarser undecomposed manganese ore into another vessel in which the mixture is steamed or evaporated, the mass decomposes with water; gas is emitted; an acid solution results, and the colour remains separated in great fineness as a compound of oxide of manganese (and of oxides of iron if a compound of iron has been added), ammonia, water, and phosphoric acid. Like results may be obtained from other compounds of manganese, iron, ammonia, and phosphoric acid, as well as directly from phosphorus, manganese, and ammonia, with or without nitric acid, and likewise from a solution of burnt bones in hydrochloric acid digested with sulphate of ammonia. Various shades may be obtained by decomposing bones by sulphuric acid and mixing with manganese, and heating the whole mass or the phosphate of lime which is separated. Ammonia can be added at once, or the mass can be washed and ammonia added to the salt when steamed or evaporated. In one mode of carrying out the process calcined bones are decomposed by sulphuric acid, and throughout the operation a lye of phosphate of lime is used; the lime is saturated with an excess of ammonia; the solution is filtered and steamed or evaporated. The phosphate of ammonia is heated to a high temperature, and when the water and the excess of ammonia are driven off, manganese is gradually added and the temperature raised. The wash waters may be evaporated, and the phosphate again utilized with manganese, with or without ammonia.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 20.—N° 3528.

BRITTEN, Bashley.—" Improvements in the construction of fishing rods."

The construction of rods used for angling or fishing of steel or other metal instead of wood.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 20.—N° 3529.

SUTHERLAND, Frederick Daniel. — (*Provisional protection only.*) — " Improved cravat holders or " fasteners."

The novelty of this invention consists in the use of double or single hook-shaped pieces of flattened metal formed in one or two parts, or a stud with a hook or a sharp point or points fixed therein.

The double hook shaped piece is intended to embrace the lower edge of the collar and the upper edge of the cravat. The single hook-shaped piece is intended to embrace the upper edge of the cravat, and the lower part of this piece is to be passed over the button that connects the collar to the band of the shirt. The studs are to be passed into a button hole formed in the collar; the hooked piece embraces the upper edge of the cravat, and the sharp point or points, when this kind of stud is used, is or are intended to enter the material of which the cravet is made and thereby prevent it riding up.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 20.—N° 3530.

BROOKES, William.—(*A communication from William Hall and George Hall.*)—(*Provisional protection only.*)—" Improvements in the manufacture of fabric in lace machinery."

The invention relates to the production of muslin or fining in pattern in lace by uniting the bobbin threads in fine machines in pairs for the ground or pattern or body of the net, and then separating them into single threads interlaced or twisted with the warp threads for the muslin or fining.

Gymp threads are also introduced to increase the effect.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 20.—N° 3531.

COWELL, Henry Bridge.—(*Provisional protection only.*)— " Improvements in apparatus for the distribution of water or other liquids in fine particles, which apparatus is also applicable in the distribution " of fine particles in powder.

The object of the invention is to distribute fine particles in a liquid or solid form by a brush or brushes made to revolve or move in a trough containing the matter to be distributed, such brush or brushes being acted upon at the upper surface thereof by the edge of a plate, the position of which may be regulated to effect the distribution in the fine quantities desired.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 20.—N° 3532.

LAKE, William Robert. — (*A communication from Charles Joseph Vowinkel.*)—" An improved mode " of and means for operating reciprocating saws."

The nature of my invention consists in imparting reciprocating motion to a scroll saw from a revolving shaft by means of flexible bands attached to the upper and lower ends of the saw; the said bands passing over suitable pulleys and being connected to pins disposed eccentrically upon driving wheels secured on the said shaft or to bands encircling wheels secured excentrically thereon. I thus dispense entirely with rods, links, or other rigid connections between the saw and its motive power.

[Printed, 10*d*. Drawings.]

A.D. 1868, November 20.—N° 3533.

EGUILLON, Gilbert.—" Improvements in the mode of suspending bells by means of three oscillating " levers."

This invention consists in suspending bells by means of three oscillating levers, the length of which desired length, giving increased power of action and a regular and even motion. The ad system of hanging bells by means of suspended oscillating levers is that the pivot turning polished surfaces cannot by any means escape from the levers, being drawn by them in manners, and this without any great friction, but merely that of rotation.

The object is to do away with the belfry, but should one be employed it is important th suspension should be fixed as already described, as by this means no harm can happen theret

[Printed, 10*d.* Drawings.]

A.D. 1868, November 20.—N° 3534.

DESCAT, Constantin, and GUILLAUME, Henry.—" Improvements in the mode of fi " textile fabrics composed of wool and cotton."

This invention consists in the employment of metallic solutions of iron, copper, manganes either pure, singly, mixed together, or in conjunction with coloring matters for printing o consisting of wool and cotton, wool and thread, goatshair and cotton, goatshair and thr cotton, alpaca and thread, and all other tissues composed of a mixture of textile, veget matters, either by means of the cylinder printing machine or otherwise, the process being for printing thread tissues, thread and cotton, or cotton. The fabrics are allowed to ox application, the oxydation being completed by subjecting them to an alkaline or bi-chromate

The advantages of the application of this system to the tissues named is that the colours o are unchangeable either by the action of light or washing.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 20.—N° 3535.

NEWTON, Alfred Vincent. — (*A communication from Samuel Ivers.*) — " Improveme " needles."

The object of this invention is to enable the needle to be threaded with facility and di requiring the thread to be passed endwise into and through the eye of the needle.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 21.—N° 3536.

LAKE, William Robert. — (*A communication from Charles Brown.*)—" An improved " means for preparing and baling chopped hay and straw."

I first cut the hay and straw quite short with a hay cutting machine. A crushing mach close proximity and in such relation to the cutting machine that the cut hay or straw directly from the cutting machine to the crushing machine. I arrange a blower or fan near and crushing machines to force a current of air through and across the column of cut hay as the cutting, crushing, and cleaning of the hay may be effected by a single handling thereof. In constructing my improved press, slots are cut in the sides of the press box for the passage of a follower, which slots are covered by metal plates connected to and moving with the follower, so that the escape of the hay through the said slots in the act of pressing is prevented. I make one side of the press box, in addition to the ordinary top and front doors thereof, movable, so that after the bale is pressed and bound the pressure upon all sides thereof may be removed, and the bale removed from the press-box without difficulty. The descent of the follower is controlled by means of friction brakes. I connect together the links of the chains by which motion is communicated to the follower in such a manner that they wind spirally upon the windlass shafts or drums. A hinged partition is arranged in the press-box so that two small bales may be pressed at the same time. When the hay is properly cut a sufficient quantity of it is put into the press to make a bale of the required size. A layer of long straw or hay is first laid on the bottom of the press and the short cut hay upon the straw, and another layer of long straw or hay placed on the top of the cut hay. Convenient grooves are made in the press to allow cords, bands, or hoops to be passed around the bale, so that the ends may be strongly tied or fastened before the pressure is applied.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, November 21.—N° 3537.

TONGUE, John Garrett.—(*A communication from Régis Blanchard.*)—(*Provisional protection only.*)—"Improvements in the treatment and preparation of yarns or threads for weaving, sewing, or other purposes, "and in the machinery employed for this purpose."

Certain yarns or threads, such as those made from silk waste and spinning waste and other materials, are rough and hairy and have knots or slubs which render their employment difficult for weaving and other purposes if the surface of the thread is not made smooth and even by some means; and the object of this invention relates to certain means and machinery for effecting this object.

According to this invention a rubbing of the thread against itself is produced by any suitable mechanism or by causing it to interlace among or around bars having a to and fro or reciprocating movement.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 21.—N° 3538.

SCHOLES, John, and **LEACH**, Jabez.—(*Provisional protection only.*)—"Improved means of preparing "wool or other fibre for feeding same to carding engines and condensers."

The novelty consists in,—

The breaking or separating ropings of fibre, produced by any suitable means, into certain lengths and laying a series of them side by side and in regular order, to be joined end to end upon a lattice sheet, which presents them to be wound upon a bobbin. Such bobbins are then to be placed upon the creeper of a carder or condenser, so as to unwind the said ropings and feed them in direct lines at right angles to the card cylinders or rollers of such machines.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 21.—N° 3539.

ABEL, Charles Denton.—(*A communication from Felix Mazet.*)—"A combined tobacco pouch and "cigarette former."

This invention consists in forming in the hinged framing of the tobacco pouch a recess containing the cigarette former, consisting of three rollers, round which an endless band passes, which is moved in one direction or the other over the rollers by tapes.

One roller is on a moveable frame held in the closed up position by spring catches.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 21.—N° 3540.

SMITH, Christopher, and **MACFARLANE**, John.—(*Provisional protection only.*)—"Improvements in "washing machines."

The feature of novelty which constitutes this invention is the arrangement of ribs or feathers in reciprocating or oscillating washing machines, and the motion of the machine causes the clothes to be thrown from side to side over the inclined planes or feathers, and the clothes are thus effectively washed with a great saving of time and labour.

[Printed, 4*d.* No Drawings.]

cooled water is sent into the motor, in which it is reheated by serving for the condensation
into the jacket, restoring the lost heat to the essence, so that the essence being constantly
water in proportion as it is cooled there is no interruption or diminution in the production o

3rdly. The air is drawn by bellows worked by the motor, then sent into regulating bell
accumulates under a constant pressure.

4thly. The air becomes saturated with carburetted vapors in traversing a layer of fl
soaked with the essence by capillary attraction, and which besides is always damped therewit
a pneumatic injector worked by the motor. The saturated air rises through a series of alte
flannel and iron filings, which deprive it of the excess vapors and non-volatilized globules
issues in a suitable degree of saturation by a pipe, from which it is distributed for consumpti

[Printed, 8*d*. Drawing.]

A.D. 1868, November 21.—N° 3542.

SIMS, John.—" Improvements in the manufacture and mode of applying ornaments to w
" fabrics."

Trimmings or patterns I make of silk or other ornamental fabric coated at back with an e
substance which will serve as an elastic cement to secure the trimmings or patterns to the fabri
to which they are applied.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 21.—N° 3543.

HARRIS, Isaac Blue.—(*Provisional protection only.*)—" Improvements in the manufact
" bands."

A core of combined metal and india rubber compound is surrounded with cotton or canvas
india rubber compound and vulcanized.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 21.—N° 3544.

FOSTER, Charles Joseph.—(*Provisional protection only.*)—" Improvements in obtaining
" reciprocating motions of the cutter bar in reaping, mowing, and other similar agricultural m
" improvements in wheels for agricultural machines, which last-named improvements are also
" traction engine wheels."

According to this invention geared or toothed wheels are dispensed with for operating the tr
of cutters and other apparatus, and a zig-zag slot is cut around the periphery of the road whee
pin attached to the knife bar enters, when by the revolution of the wheel the bar derives
motion.

A starred wheel is applied to effect a bite or adhesion of the motor wheel. The teeth protr
holes in the rim; the star wheel rotates in bearings within the motor wheel. These impr

in casting the steam ports and passages in the cover and cross piece; also in certain improved modes of connecting the cylinder to the standards.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 23.—N° 3546.

INGLIS, WILLIAM.—"Improvements in steam engines and in blowing engines."

In one modification of the improved arrangements a small high-pressure cylinder and large low-pressure cylinder are placed side by side with their pistons connected to cranks which are diametrically opposite or nearly so. There are six cylindrical valve chambers with their valves, which are placed with their axes parallel to each other and at right angles to the crank shaft. All six valves may be worked in any convenient way, as, for example, by a single vibrating disc, or the four in connection with either of the cylinders may be worked from a disc, whilst the other two valves may be worked by a separate disc or rocking shaft.

In a second modification only four valves are used for the two cylinders, those between the cylinders being arranged to both admit steam to the small cylinder and transfer it to the large one, by making each valve hollow, so as when in one position to cover and put in communication the ports of both cylinders.

In adopting any of the hereinbefore described arrangements in a blowing engine the air cylinder may be placed either so as to be worked directly by a piston rod from the small cylinder or so as to be worked by one from the large cylinder.

The second part of the invention relates to improved appliances for closing the steam valves, and in one modification where a plunger is arranged to work through a stuffing box into a cylinder or chamber which is in communication with the condenser, so that the atmospheric pressure constantly tends to force the plunger inwards; the chamber is filled or partly filled with oil or other suitable liquid, and the bottom of the plunger is made conical to fit a conical seat formed for it in the inner end of the chamber. Instead of the plunger or its equivalent being moved inwards by atmospheric or other fluid pressure, the necessary pressure for that action may be applied by a metallic or other spring.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 23.—N° 3547.

MANGNALL, JOHN.—(*Provisional protection only.*)—"Improvements in chairs, cradles, couches, and "beds."

This invention relates principally to an improved oscillating chair to be substituted for the ordinary rocking chair, and the seat of which is fitted with one or other of two improved arrangements of springs. The arrangements for obtaining oscillation are also applicable to cradles, and the arrangement of springs are also applicable to couches and beds.

In the improved chair the oscillating part is restricted to the seat and back, with the arms, if any, which rest on a frame comprising the legs constructed like those of any ordinary non-rocking chair. The top sides of the leg frame and the under sides of the seat frame are curved, so that the latter will oscillate or rock on the former, or one may be straight and the other curved.

In one of the improved arrangements of springs for the seat, straps fixed to opposite sides of the frame are passed down through a ring and then each turned back underneath and fixed to a spiral or other suitable spring, having its other end fixed to the frame.

In the second improved arrangement of springs for the chair seat, curved blade springs projecting upwards and backwards are fixed to the front of the frame, and are connected by straps to straight blade springs fixed to the back.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 23.—N° 3548.

BOWDEN, JOSEPH, MILLS, MARK NIELD, and MILLS, BENJAMIN RILEY.—(*Provisional protection only.*)—"Improvements in carding engines for carding cotton and other fibrous materials."

Our invention consists in applying a roller between the main cylinder and the doffer to prevent the accumulation of fibres at that part, thereby preventing the uneven thickness of the web.

Our invention also consists of a self acting stop motion applied to the trumpet mouth of the drawing or calender rollers to stop the doffer and the feed when the web breaks.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 23.—N° 3549.

LA PENOTIÈRE, WILLIAM.—"An improved construction of lock."

This invention consists in constructing a lock with a double bolt, each bolt of this double bolt being acted upon independently of the other, and carrying a metal plate, which when the bolt is shot, comes

This invention consists in so dividing and subdividing the steam and condensing wat
perforated dishes and pipes that the condensation is effected with great rapidity in a com
vessel.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 23.—N° 3551.

HUGHES, Edward Thomas.—(*A communication from Joseph Notingham Smith and Hen*
—" Improvements in presses for compressing and otherwise operating upon metal, hay, bri
" various other materials."

The object of this invention is to produce a press or other analogous machine, the power
by means of an annular wedge or wedges driven by power, the said wedges operating the
the materials to be pressed or shaped.

[Printed, 2*s*. 10*d*. Drawings.]

A.D. 1868, November 23.—N° 3552.

HOWLISON, James.—" New or improved movable sleeping berths for railway carriages, ar
" and appliances connected therewith."

This invention consists substantially in several general arrangements of movable sleepi
berths for railway carriages made to slide vertically or turn radially in grooves at their ends
their sides, attached to the sides of the carriage or to the partitions, either together or sepe
in addition to the usual seats, arranged to move up and down, so as to be carried when not
up to each other, and the roof of the carriage or down to the floor, or into the position o
form the seat during the day, or when not in use, or folded up to the back partition, to
hinged, and fixed in their respective desired horizontal position and distance apart rest
brackets, for use, or in their compact position out of use, by spring or slip bolts, or
appliances.

[Printed, 1*s*. Drawing.]

A.D. 1868, November 23.—N° 3553.

CRABTREE, Charles, and STELL, John.—" Improvements in apparatus employed in t
" of paper tubes."

The paper in width adapted to the length of the tubes for the time to be produced i
to a cylinder to receive paste, and thence by the aid of conducting tapes and rollers it
between cutters to be cut into lengths. These lengths are received on to other bands or
and another roller each length of paper is conducted on to a mandril of the size of the
When formed the bands or tapes and roller recede from the mandril, and clips then act
remove each tube in succession.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, November 23.—N° 3555.

IBBETT, William Henry.—(*A communication from John Thibauld Hancock.*)—"Certain improvements "in an apparatus for inducing motion in mobile substances or bodies by the action of air and steam "in combination."

The objects of my improved apparatus are to econimise the use of the motor, to increase the power of the apparatus, and to adapt it to new and useful purposes other than the condensation and rarification of air or the raising and forcing of liquids. These desirable results are obtained by certain original changes which I have made in the ancient apparatus.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 23.—N° 3556.

LYTTLE, William Alexander.—(*Provisional protection only.*)—"Improvements in electro-telegraphic "apparatus."

These improvements are,—

Firstly. The employment of two inkers or embossers in the Morse printer, one of soft iron and one magnetized, so that with one kind of current the soft iron lever only shall be attracted, whilst the opposite current shall attract both, and by this means dots or double dots will be formed as a substitute for the "dots and dashes" of the present Morse code.

Secondly. The application of this principle to a bell telegraph.

Thirdly. The employment with such instruments of the momentary current of an induction coil for signalling and relay purposes.

Fourthly. The propulsion of the paper band of the Morse instrument by an electro-magnetic ratchet in lieu of the present clockwork.

Fifthly. The combination of a single needle with this Morse instrument.

Sixthly. The employment of a needle of a single needle instrument as the conducting tongue of a relay with its limiting pins as the terminal conductors. Also a peculiar form of needle supported only by the attraction of a pole of a permanent magnet.

Seventhly. A peculiar form of combined intensity and quantity arrangement of battery, with also a peculiar substitute for glazing in pottery cells.

Eighthly. The use of Walton's patent oxidised oil in the insulation of electrical conductors; and the freeing of aerial conductors from ice or snow by passing through them a thermally powerful electric current.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 23.—N° 3557.

STURROCK, James.—(*Provisional protection only.*)—"Improvements in metallic or other caps and in "their application to bottles or other vessels."

The feature of novelty which constitutes this invention is the application to bottles of a metallic cap having a central perforated projection over which is screwed a secondary cap, the removal of the latter at any time allowing the contained fluids or liquids to be sprinkled as desired.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 23.—N° 3558.

MONTAGU, Charles.—(*Provisional protection only.*)—"Improvements in the manufacture of pianofortes, "harmoniums, and certain other musical instruments."

The case, body, or framing of the instrument is made of a foundation of wood or other rigid substance, which is coated, covered, or faced with sheets, strips, or pieces of caoutchouc or of a compound of caoutchouc cemented or attached to the foundation.

Fretwork or ornamental designs may be formed by cutting through a slab of wood or other material covered, faced, or coated with caoutchouc or a compound thereof, or by cutting through a sheet or slab of solid caoutchouc or of a compound of caoutchouc.

Ornaments, beadings, and mouldings of solid caoutchouc or compounds thereof may be attached, and ornamental designs may be formed on the covering, coating, or facing surface before or after applying it.

The semitone or sharp and flat keys may be coated, covered, or faced with strips or pieces of caoutchouc or it compounds in like manner.

[Printed, 4*d*. No Drawings.]

NEWTON, William Edward.—(*A communication from John Falconer.*)—" Improvements i
" facture of felted fabrics and wearing apparel, and other articles from the same."

The improved fabric is made by crossing and interlaying the fibres by laying one sheet tra
the other while the latter is moved forward so as to receive the former in an angular course the

[Printed, 8*d*. Drawing.]

A.D. 1868, November 23.—N° 3561.

SWANN, John Russell.—(*Provisional protection only.*)—" Improvements in burning lime,
" therein employed."

According to this Provisional Specification two ordinary draw kilns are placed back to back a
chamber is formed between them. Air is here heated, and this is forced into the kiln to supply
support combustion.

Kilns of other construction may have heated air forced into them to support combustion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 23.—N° 3562.

SMITH, Thomas, and BAZALGETTE, John Van Norden.—" Improvements in deo
" manufacturing manures from sewage and other foul waters, and in apparatus employed ther

This Provisional Specification applies,—

1. To the method of admitting the sewage into the settling tank.
2. To the way of forming the bottom of the said tank, and to the drawing off of the deposit
3. To the filters employed.
4. To the composition for precipitating the sewage.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 23.—N° 3563.

DREAPER, William Henry.—" Improvements in the construction of pianoforte hammers

This Provisional Specification describes the use or application of vulcanized india rub
similarly elastic substances in the covering of piano-forte hammers.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 23.—N° 3564.

PHILLIPS, James Edwin.—(*Provisional protection only.*)—" Improvements in sewing ma
" of which improvements are applicable to other purposes."

The invention consists, firstly, in the construction of the gearing of sewing machines in t
manner :—

For the toothed pinions a boss or foundation wheel is first cast in metal with a ring or suitabl suitable means. Gearing constructed as aforesaid is also applicable to other machinery. In cases where the needle slide is operated by a crank pin entering a slot in the needle slide, the inventor covers the pin or lines the slot with india rubber, gutta percha, or compounds thereof. The invention also consists in the application of an under feed to machines having a looper below the cloth operated by a shaft or axis on which it is fixed. For this purpose the feed lever is formed with an opening in which an eccentric works, such eccentric having a crank pin fixed therein to give motion to the hook or looper which is mounted on a fixed axis below the lower shaft of the machine. The feed lever has a fork or opening formed at the lower part thereof to embrace the axis of motion of the hook or looper. Thus the requisite motions are given to the feed lever to feed the work to the needle by the eccentric, whilst a spring operates it in the opposite direction, a cam, eccentric, or other suitable means being employed to regulate the amount of motion given to the feed lever.

In sewing machines, in which treadles, levers, and cranks are used as drivers with pin joints, there is placed around each pin, between the pin and the hole through which it passes a band of india rubber, gutta percha, or compounds thereof, and when bearings are used a similar band or tube is placed around the bearings, and in shuttle sewing machines a buffer or pad of india rubber, gutta percha, or of compounds thereof is employed at each end of the shuttle carrier, and the shuttle course or groove is lined with similar material to prevent noise.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 23.—Nº 3565.

ABEL, Charles Denton.—(*A communication from Thomas Schoenberger Blair, Adolphus Guzman, Francis Ellershausen, and Augustus E. Stayner.*)—"Improvements in converting cast iron into wrought iron, and "in uniting oxides, fluxes, and other substances with molten cast iron."

This invention consists in combining solid oxides, fluxes, or other substances with molten cast iron by pouring the latter into a receptacle in a regulated stream, while at the same time the oxides, &c. are mixed therewith by sifting the same in lumps, grains, or powder into the metal and stiring it into the same; or the fluid cast iron may be poured upon a layer of pulverized ore, or the cast iron may be in a solid divided state and the ore be in a molten condition. The resulting solidified mass consisting partially of wrought iron and partially of yet unconverted cast iron is then reheated so as to convert it into homogeneous wrought iron, which is then ready to be hammered, rolled, &c. in the ordinary way.

[Printed, 6*d*. No Drawings.]

A.D. 1868, November 24.—Nº 3566.

CULPIN, Thomas.—(*Provisional protection only.*)—"Improvements in reaping and mowing machines."

The first part of the invention has relation to that part of reaping and mowing machines commonly called the beam. This is usually made of a solid bar of iron or steel with a series of projecting fingers fixed to the flat side thereof by means of bolts or rivets. In my invention the beam is composed of two plates of steel fixed a given distance apart, thereby forming a trussed beam, giving greater rigidity with a given quantity of material. This form of beam also gives greater facility for fixing the fingers, which are made of sufficient length to pass through the space between the steel plates, and are fixed in their position by a nut, the end of each finger being screwed for that purpose.

The second part of the invention relates to the cutting parts of reaping and mowing machines, and the mode of fixing the same. These parts are.—*First*, a series of steel knives or sections fixed to a steel bar or back. Commonly these sections or knives are rivetted or bolted to a plain bar, but in my invention the bar or back is furnished with a groove, and each section is furnished with a projection or rod fitting accurately into the groove of the bar and screwed by a single screw. *Secondly*. A series of steel cutting plates corresponding in number to the said knives or sections. One of these is fitted to each finger so as to be securely fixed in its position by the tightening of the nut upon the end of such finger.

The advantages of these arrangements are, great facility in fixing and removing the various parts, the maintenance of two cutting edges in place of one, as in ordinary machines, and the combination of strength and lightness.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 24.—Nº 3567.

JOHNSON, John Henry.—(*A communication from Benjamin Bellair.*)—"Improvements in safety tackle "for raising and lowering heavy weights."

This invention relates, firstly, to certain improvements in the safety tackle for which Letters Patent were

A.D. 1868, November 23.—N° 3559.

NEWTON, ALFRED VINCENT.—(*A communication from David Williams.*)—(*Provisional protection o*
" An improved mode of dressing millstones."

Instead of employing the ordinary arrangement of furrows they are each made to lead from
whereby the feed is facilitated. The sides of the furrows are parallel for the greater portion of their
and they are formed by a combination of straight and curved lines. Thus for one side a straight line
tangentially from the eye of the stone and extending over nearly one half of the width of the g
surface is continued to the periphery in a curve the radius of which is decreased as it nears the periph

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 23.—N° 3560.

NEWTON, WILLIAM EDWARD.—(*A communication from John Falconer.*)—" Improvements in the
" facture of felted fabrics and wearing apparel, and other articles from the same."

The improved fabric is made by crossing and interlaying the fibres by laying one sheet transvers
the other while the latter is moved forward so as to receive the former in an angular course thereon.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 23.—N° 3561.

SWANN, JOHN RUSSELL.—(*Provisional protection only.*)—" Improvements in burning lime, and i
" therein employed."

According to this Provisional Specification two ordinary draw kilns are placed back to back and a h
chamber is formed between them. Air is here heated, and this is forced into the kiln to supply the fu
support combustion.

Kilns of other construction may have heated air forced into them to support combustion.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 23.—N° 3562.

SMITH, THOMAS, and BAZALGETTE, JOHN VAN NORDEN.—" Improvements in deodorizing
" manufacturing manures from sewage and other foul waters, and in apparatus employed therein."

This Provisional Specification applies,—

1. To the method of admitting the sewage into the settling tank.
2. To the way of forming the bottom of the said tank, and to the drawing off of the deposit therefro
3. To the filters employed.
4. To the composition for precipitating the sewage.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 23.—N° 3563.

DREAPER, WILLIAM HENRY.—" Improvements in the construction of pianoforte hammers."

This Provisional Specification describes the use or application of vulcanized india rubber or
similarly elastic substances in the covering of piano-forte hammers.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 23.—N° 3564.

PHILLIPS, JAMES EDWIN.—(*Provisional protection only.*)—" Improvements in sewing machines,
" of which improvements are applicable to other purposes."

The invention consists, firstly, in the construction of the gearing of sewing machines in the foll
manner:—

For the toothed pinions a boss or foundation wheel is first cast in metal with a ring or suitable proj
thereon, such boss or foundation wheel is then placed in a mould having suitable cavities formed ther
the teeth, and the space in the mould not already occupied by the boss or foundation wheel is fille
india rubber, gutta percha, or compounds thereof, and submitted to the action of heat to " cure "
cause the compound to adhere firmly to the boss. For the internal toothed wheel or ring a plain
metal is first cast, and the teeth are applied or formed therein in a somewhat similar manner to that
described.

Or if desired for wheels of coarse pitch, or for large teeth, the wheels are first cast in metal with
teeth than those required, and a coating of india rubber is then applied thereto in a similar manner
above described, or in some cases a band of india rubber, gutta percha, or compounds thereof is
around the teeth and drawn down between the teeth by means of suitable bolts and nuts, or by

A.D. 1868, November 24.—N° 3571.

PRIDEAUX, Thomas.—" Improvements in the construction of sea walls and breakwaters."

This invention consists of iron framing (cast or wrought iron) filled with rubble stone, burnt clay, or other hard mineral substance suitable for the purpose, the face towards the sea being of concrete.

It offers greater facility for the enclosure of land from the sea than the present earth embankments, the latter being found very defective.

It also combines great economy and expedition, as ordinary laborers could be employed in its construction.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 24.—N° 3572.

DINWOODIE, William.—" Improvements in fences."

The feature of novelty which constitutes this invention is the employment of a stiff bar, rod, or tube fixed to the upright post or perpendiculars, and kept in a state of compression by means of strained wires at the lower part of the fence.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 24.—N° 3573.

NEWTON, Henry Edward. — (*A communication from Hiram Wallace Colver.*) —" Improvements in " atmospheric hammers for crushing ores and other purposes."

The air cylinder is in the hammer itself, and the piston thereof and its rod are actuated by a crank, and the piston acts against an air cushion in lifting or throwing down the hammer. When used for forging the hammer is set in slides. When applied to an ore crusher the slides are formed of a hollow box, and the water issues around the hammer as it slides, keeping it clean.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 24.—N° 3574.

NEWTON, Henry Edward.—(*A communication from Lemuel Scudder Fithian.*)—" Improved gearing for " multiplying motion on a single shaft."

A series of toothed wheels are mounted on the shaft, some being fast and some loose. Motion is transmitted from one to the other by toothed pinions.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 24.—N° 3575.

WETHERED, Edwin Robert.—" Improvements in apparatus for signalling in railway trains."

This Provisional Specification describes arranging in each carriage of a railway train apparatus for storing power (either a raised weight or spring) which can be liberated by a bell pull or similar contrivance. There are connections from carriage to carriage so arranged that the release of the weight or spring on one carriage causes the release of that of the next and so on throughout the train until in the guard's van or on the tender an alarm bell is caused to sound, or other suitable signalling instruments is acted upon.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 24.—N° 3576.

SOLOMONS, Benjamin. — (*Provisional protection only.*) — " Improvements in the construction and " arrangement of meteorological indicators."

The first improvement consists in the addition of a vernier scale to thermometers, by the aid of which the position of the mercury or other fluid may be ascertained to the hundredth of a degree.

The second improvement consists in the combination on one frame or plate of a mercurial syphon barometer, reference thermometer with vernier, self registering thermometer, hygrometer, and camphor glass, with a view to facilitate the reading and comparison of the several instruments when used in connection one with the other in taking mountain observations and in other exposed situations.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3577.

HUNT, Bristow.—(*A communication from Louis Auguste Etienne-Guyot.*)—(*Provisional protection only.*)— " Improvements in watches."

This invention relates to a system of winding-up mechanism applicable to watches of all kinds, and by the aid of which the winding-up is performed in far less time and more easily than with any other system

BEATTIE, William George.—" Improvements in slide valves."

The features of novelty which constitute the said invention are the modes or methods o
valves, as described in the said Provisional Specification.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 24.—N° 3569.

SIEMENS, Charles William.—(*Letters Patent void for want of Final Specification.*)—"
" in the manufacture of iron and steel, and in furnaces and apparatus connected therewith
" improvements are also applicable to the calcining, reducing, and burning of ores and gran
" generally."

This invention consists, firstly, in calcining or roasting iron and other ores in a horizontal
of iron lined with firebrick, though one end of which the ore is introduced, while it passes
end. Combustible gas and air pass into the drum at the exit end, where they enter into com
having been previously heated by passing through passages formed in the casing of the
gas is also heated by passing through passages in contact with the heated ore as it pa
gaseous products of combustion pass away through a flue communicating with the inlet en
This apparatus is also employed for burning cement and other granular substances. The
may be mixed with such ingredients as, in combining with foreign substances contained the
them volatile or soluble, to be removed by levigation.

Such calcining apparatus may be combined with blast or other furnaces for carrying
operations. For producing pulverulent metallic iron the calciner is combined with the rotatin
apparatus described in the Specification to Patent No. 1892 of 1868, from which the reduced
a closed chamber cooled externally. This pulverulent iron is employed for mixing with li
and also for forming the bottom and sides of a bath of cast steel, for which purpose it is mixe
fire clay. Puddling furnaces lined with this material are made of double the usual capa
opposite working doors, and they are provided with a chamber for heating the cast iron before

The puddling pan is made of cast steel of considerable thickness, cooled externally.

In place of peroxides used for fettling, comparatively pure protoxides or proto-peroxides
which are mixed with nitrate of soda, potash, sal ammoniac, &c., and enclosed in lead receptac
discs thrown into the bath of metal, the nitrate of soda, &c. producing violent commotio
accompanied by energetic chemical action, whereby the process of puddling is effected with
manual labor.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 24.—N° 3570.

CARTER, William.—(*Provisional protection only.*)—" Improved means or apparatus for c
" in railway trains."

Tubes are fixed internally or externally to one or both sides of the carriage having conne
compartment terminating in a mouth-piece hermetically closed; these tubes are connected
carriages and with a tube or tubes in the guard's van closed by a whistle. Spare bra

A.D. 1868, November 24.—N° 3571.

PRIDEAUX, Thomas.—" Improvements in the construction of sea walls and breakwaters."

This invention consists of iron framing (cast or wrought iron) filled with rubble stone, burnt clay, or other hard mineral substance suitable for the purpose, the face towards the sea being of concrete.

It offers greater facility for the enclosure of land from the sea than the present earth embankments, the latter being found very defective.

It also combines great economy and expedition, as ordinary laborers could be employed in its construction.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 24.—N° 3572.

DINWOODIE, William.—" Improvements in fences."

The feature of novelty which constitutes this invention is the employment of a stiff bar, rod, or tube fixed to the upright post or perpendiculars, and kept in a state of compression by means of strained wires at the lower part of the fence.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 24.—N° 3573.

NEWTON, Henry Edward. — (*A communication from Hiram Wallace Colver.*) —" Improvements in " atmospheric hammers for crushing ores and other purposes."

The air cylinder is in the hammer itself, and the piston thereof and its rod are actuated by a crank, and the piston acts against an air cushion in lifting or throwing down the hammer. When used for forging the hammer is set in slides. When applied to an ore crusher the slides are formed of a hollow box, and the water issues around the hammer as it slides, keeping it clean.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 24.—N° 3574.

NEWTON, Henry Edward.—(*A communication from Lemuel Scudder Fithian.*)—" Improved gearing for " multiplying motion on a single shaft."

A series of toothed wheels are mounted on the shaft, some being fast and some loose. Motion is transmitted from one to the other by toothed pinions.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 24.—N° 3575.

WETHERED, Edwin Robert.—" Improvements in apparatus for signalling in railway trains."

This Provisional Specification describes arranging in each carriage of a railway train apparatus for storing power (either a raised weight or spring) which can be liberated by a bell pull or similar contrivance. There are connections from carriage to carriage so arranged that the release of the weight or spring on one carriage causes the release of that of the next and so on throughout the train until in the guard's van or on the tender an alarm bell is caused to sound, or other suitable signalling instruments is acted upon.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 24.—N° 3576.

SOLOMONS, Benjamin. — (*Provisional protection only.*) — " Improvements in the construction and " arrangement of meteorological indicators."

The first improvement consists in the addition of a vernier scale to thermometers, by the aid of which the position of the mercury or other fluid may be ascertained to the hundredth of a degree.

The second improvement consists in the combination on one frame or plate of a mercurial syphon barometer, reference thermometer with vernier, self registering thermometer, hygrometer, and camphor glass, with a view to facilitate the reading and comparison of the several instruments when used in connection one with the other in taking mountain observations and in other exposed situations.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3577.

HUNT, Bristow.—(*A communication from Louis Auguste Etienne-Guyot.*)—(*Provisional protection only.*)— " Improvements in watches."

This invention relates to a system of winding-up mechanism applicable to watches of all kinds, and by the aid of which the winding-up is performed in far less time and more easily than with any other system

A.D. 1868, November 25.—N° 3578.

PARRY, John.—" Improvements in springs, and in the application of the same to mattresse
" other upholstery purposes."

This invention applies to coiled or spiral springs used for mattrasses, couches, sofas, chairs
other seats, and for other similar upholstery purposes; and consists chiefly in protecting
spring by means of a top or cap of wood, metal, or other suitable substance, which top
preferably of a mushroom form, but it may be made oval, octagonal, or of other convenient s

The object of this arrangement is to prevent the top of the spring from wearing throug
material (where a cover is used), and at the same time to leave each spring perfectly free an
of the rest, so that each spring acts separately and bears its own separate amount of pressure.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 25.—N° 3579.

LAKIN, Robert, and RHODES, William Henry.—" Improvements in machines for
" doubling."

This invention is applicable to the machines for spinning and doubling known as self acti
it consists,—

First, in connecting the under faller lever and brake lever by means of a spring instead of a

Secondly, in attaching the tension pulley used for tightening the rim band to one end of
the other end of the lever applying a spring to keep the band tight.

Thirdly, in an improved combination of machinery for locking the faller.

Fourthly, in an improved combination of machinery to obviate breakages which sometimes
mule fails to make the required changes in the back or drawing out shaft.

Fifthly, in certain improvements in the machinery for driving the cam shaft and pa
therewith.

Sixthly, in certain improvements applicable to Roberts self acting mules, consisting in the
a sliding segmental wheel to the cam shaft, and in connecting the backing off lever to the st
sliding bar; also in applying a vertical shaft for taking the backing off friction cone out
putting the taking in catch box into gear.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, November 25.—N° 3580.

WILD, William.—(*Provisional protection only.*)—"An improved arrangement and adaptation
" to the driving shafts of motive-power engines to be employed for equalizing and regulating
" such shafts."

The novelty of the invention consists in connecting with the driving shafts of motive po
coiled or spiral spring enclosed in annular space formed by the placing together of two vices,
is keyed or otherwise secured to the drawing shaft and the other connected to the whee

apparatus connected with the driving power which will turn on the full pressure and supply of the gas when the driving power is set to work and turn it off when the driving power stops, leaving only a minimum supply of gas when the driving power is not in motion.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 25.—N° 3582.

CRAIG, THOMAS.—"Improvements in the means or apparatus for hanging and supporting windows, " doors, shutters, and other such like moveable fittings in houses, vehicles, steamboats, and other places or " structures in which such fittings are used."

The invention is designed to supersede the present cumbrous and expensive apparatus of cords, pulleys, and weights, by substituting two or more moveable rollers or wheels of india rubber or other elastic substance or compound, which are intended to work in a groove cut in either the frame or the sash of a window or other moveable fitting, the said rollers or wheels being to a certain extent compressed, acting as a kind of flat wedge to support the window or other moveable fitting when at rest and as a travelling roller when moved. The chief characteristics of this invention are its simplicity, cheapness, and durability.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 25.—N° 3583.

SPENCER, PHILLIPS.—(*Provisional protection only.*)—"An improved mode of preparing or making up " indigo blue or preparations or compounds of indigo for the market."

The indigo, instead of being made into balls or "thumbs" as usual, is spread on sheets of paper or linen.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3584.

LAKE, WILLIAM ROBERT.—(*A communication from Richard Austin Bright, junior, and Lucien Bonaparte Stone.*)—" Improvements in machinery for manufacturing cigars."

The machine is constructed with a main or stationary frame, which carries two rollers; with these rollers are combined three other rollers carried in an adjustable frame. The said rollers have concave surfaces and the cigars are formd between them. The cigars are pointed in a cone-shaped header, and their length is regulated by means of a sliding follower. The follower is fitted on the end of a short horizontal spindle, and is made yielding by a spring. The header is attached to a pin or rod and kept from turning by projecting lips. The knife or cutter is carried on a swinging arm pivotted to the adjustable frame. The knife is kept up by a weight on the arm and is caused to descend to cut the cigars.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 25.—N° 3585.

BROOK, SCIPIO, and THOMPSON, CHARLES.—" Improvements in looms for weaving."

This invention relates to means of acting upon the "swell" so as not to press upon the shuttle at any time except immediately after the said shuttle has got into the box, and which is relieved again before the said shuttle is "picked" or sent out of the box.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 25.—N° 3586.

MERRY, DANIEL SAMUEL.—(*Provisional protection only.*)—" Improvements in arm protectors."

For this purpose a covering for the arm is formed of leather or other suitable waterproof or fireproof material or combination of materials to fit closely round the wrist by means of an elastic gusset or by buttons, hooks, buckles, or other suitable means applied at that part. These protectors may extend from the elbow to the wrist, or they may be made long enough to protect the arm from the shoulder downwards to the wrist, in which case, when made of rigid or comparatively rigid material, it will be made in two parts connected together at the elbow by means of a suitable elastic or flexible tube or connection.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3587.

CHAPMAN, WILLIAM FLOYD.—(*Provisional protection only.*)—" Improvements in packing boxes or " packing cases."

According to this invention the packing box or packing case is made of a series of trays or shallow boxes open at top, which are piled upon one another. The bottom tray has a vertical rod at the outside of each mâché or metal by forming a raised concentric rim or ring near the edge of the bottom, rim the bottom band of the body of the cage is fixed by tongues and a spring catch fastening ring.

Another part consists in making the cups and doors of bird and other cages self-closing by m or helical springs, so that when the said cups and doors are loosed by the hand they close their fixed positions, and thereby prevent the escape of the bird or animal.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 25.—N° 3589.

GEDGE, WILLIAM EDWARD.—(*A communication from Antoine Faurie.*)—(*Provisional prote* "A novel system of tug or tow boat."

The tug of this invention derives its motive power from the stream itself, and may be eithe stationary. In the first case it can only tow up stream, but in the latter it tows both up and d

An endless chain or cable thrown into the water-course along the whole line to be worked at the up stream end serves as fulcrum to the travelling tug, the traction of which it resists alone. This traction is brought upon the chain by passing it over pullies on the tug, this la of two boats carrying between them a paddle wheel, which revolving under the pressure causes the pulleys to nip the chain and draw the tug along it up stream together with the ves may have in tow. To descend the stream the tug is freed from the chain and simply fl current.

To tow both up and down stream these tugs are arranged in echelon, being stationed at th stream where the current is most rapid and placed in connection by an endless chain set in action of the current on the paddle wheels of the tugs and acting as a driving band on hori carrying it on edge. This chain is furnished at certain distances with rings to which the bo be towed are hooked on.

These tugs carry any number of paddle wheels according to their length, these wheels bei divided in the centre into two parts between which the driving pulley is placed (or this latte a separate shaft), and the number of paddles or floats is regulated by the size of the wheel.

The travelling tug is made of sheet iron, and as light as possible in order that it may abs itself as little as possible of the power it derives from the current.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3590.

GEDGE, WILLIAM EDWARD.—(*A communication from Antoine Bounaz.*)—"Improvements "embroidering machines."

The object of these improvements is to permit curves and patterns of the most intricate des embroidered upon a fabric without the necessity of constantly turning the entire fabric in co the pattern.

The improvements consist.—

A.D. 1868, November 25.—N° 3591.

SMITH, Hugh.—(*Provisional protection only.*)—" Improvements in apparatus to be used in playing " games."

This Provisional Specification describes a block of a polygonal form which is padded round the edges with elastic material. The block is used with a cloth or table cover which is marked and divided to suit the game to be played upon it. The games are played with balls.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3592.

VAN HECKE, Englebert Théophile.—" Improvements in steam boilers."

The novelty of this invention consists in so constructing a vertical boiler as that the heat from the fire shall first ascend through the inside of the boiler, then pass over the top thereof and descend around the outside, before it escapes into the chimney; the boiler and fire box are cylindrical, the fire box being within the boiler.

Another feature of novelty consists in making the bottom of the boiler at a lower level than the top of the fire bars, by which, burning of this part of the boiler and explosion thereof is prevented.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 25.—N° 3593.

SPARTALI, Nicholas Demetrius.—" Improvements in the mode of obtaining and in apparatus for " applying heat to steam boilers."

The liquid fuel is forced (in the form of spray) into the fire flues of auxiliary and main boilers by high pressure steam or heated air admitted to the feed pipe in rear of the mouth or discharging end; air may also be admitted direct to the fire flue to fan the flame of the ignited fuel and increase its intensity if required.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 25.—N° 3594.

BOURNE, John.—" Improvements in the production of heat, and in the generation and application of " motive power derived therefrom."

Generating heat by blowing coal or other combustibles into a combustion chamber; also obtaining power from the heat generated by such combustion by saturating the heated gases with steam or water.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, November 25.—N° 3595.

MILSTED, Henry.—(*Provisional protection only.*) —" An improved buckle or fastening especially appli- " cable to belts, bands, straps, traces, and thongs."

The buckle or fastening consists of two parts combined; that is to say, the sides or lateral arms of the frame of the buckle instead of being, as is usual, each in a solid or continuous piece, are spring arms or sides; each such side consists of a rod, bar, or arm entering a hollow or tubular rod, bar, or arm, and used in combination with a spring. The tubular arms are capable of sliding on or over the inner arms, or the inner arms of sliding in the tubular arms; one part of the buckle frame thus consists of an end bar or end piece, and of two hollow or tubular arms or sides, while the other part consists of an end piece and of two arms or sides entering the hollow or tubular arms or sides and combined with springs, a prong or tongue being on one of the end bars.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3596.

LAKE, William Robert.—(*A communication from Sherman Minor Johnson, Malcolm Clark Turner, and Robert Turner.*)—" Improvements in sad irons, and in the means for heating the same."

This invention consists, first, in the combination with a reversible sad-iron provided with a suitable burner of a reservoir for containing oil or other hydro-carbon liquid, so connected to the said sad-iron as to supply the burner with the necessary quantity of the oil or other hydro-carbon liquid; it also consists in the combination with the said reservoir and sad-iron of devices or mechanism for heating the iron by generating and burning within the same the vaporous products of the oil or other hydro-carbon liquid; also in a burner of novel construction, with which is combined a vapor-generating chamber; it also consists in the arrangement of a valve and means for operating the same, whereby the flow of the hydro-carbon liquid

up or projecting portions at the top of the other plate or bar. It is preferred to form the
with slanting sides so that it lies obliquely on the other plate. One plate is attached to th
of the scarf or cravat, and the end of the neckband or slide is passed between the plate
fastened in position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3598.

ELLENBAND, Elias.—(*A communication from Jacob Huzarski.*)--(*Provisional protectio*
" proved apparatus for threading domestic needles."

The features of novelty in this invention consist in the form and arrangement of passage
a metallic tip, one of which passages may be provided with a ratchet or crochet bar, the who
to a pencil or needle case, or provided with a separate handle as and for the purposes describ

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3599.

ROMAN, Louis.—(*Provisional protection only.*)—" An hydraulic motive power."

The invention consists in obtaining motive power from rivers or other streams of running
of an endless chain formed of flat iron bars with articulated joints and curved paddles, whic
revolves over drums, pulleys, or wheels, and is left partly immersed in the water in the
current, which latter by acting on the immersed paddles of the endless chain will procure t
this latter and of its drums, pulleys, or wheels and thus create a motive power for driving ma
similar purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3600.

HOLT, Francis.—" Certain improvements in 'steam' engines."

My invention consists, first, of an improved lubricator applicable to the cylinders and
steam engines; the vessel containing the lubricant is provided with two valves, the spind
screwed together; these valves are opened and closed by turning the spindle of the upper on

Secondly, of an improved metallic packing for the stuffing boxes of steam engines, th
are cut through in one place, and they fit in a conical bush loose in the stuffing box.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 26.—N° 3601.

PANTON, Patrick.—(*Provisional protection only.*)—" Improvements in fire-arms."

This invention relates to the ignition of the charge of fire arms, and it has for its object to
tion by friction instead of percussion so that the shock of percussion may be avoided and the
for firing may be diminished.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3602.

CLARK, Alexander Melville.—(*A communication from Pierre Joseph Alexis

Spermaceti.
Phenic acid.
Caustic soda.
Syrup of fecula.
Stearine.
Starch.

These materials are reduced to a pasty or gelatinous condition by boiling in water, and applied for sizing and dressing threads and fabrics of animal or vegetable nature.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3603.

SINCOCK, John.—"Improvements in ratchet braces, which improvements are also applicable to ordinary "ratchet levers and ratchet wheels generally."

This invention relates to a peculiar construction of ratchet braces whereby increased strength, simplicity, power, and durability are obtained; and consists in the employment of a sliding pall acted upon by a helical spring inclosed in a spring box, which is removeable for actuating the ratchet wheel of a ratchet brace. The sliding pall, spring, and spring box are all contained in the head of the actuating lever of the brace, and access can be readily obtained by removing the hoop or bush which serves to keep the ratchet wheel in its place. This hoop is held in its place by two or more screws, on removing which all the parts can be readily taken out. By this arrangement the pall remains constantly in contact with the ratchet wheel, and consequently all possibility of slip is prevented and a dead pull with an entire absence of back lash or looseness is insured. The working parts are moreover wholly inclosed, and being wrought iron their durability is increased by casehardening them. This arrangement is applicable to ordinary ratchet levers and other purposes where ratchet wheels are employed.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 26.—N° 3604.

SWITHENBANK, Henry.—(*Partly a communication from Charles Columba.*)—(*Provisional protection only.*)—"Improvements in apparatus to be used in the manufacture and finishing of hats."

This Provisional Specification describes an improved construction of the hatter's tool called a potence.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3605.

SPOONER, Charles Easton, and HUDDART, George Augustus.—(*Provisional protection only.*)—"Improvements in the construction of railways."

The abutting ends of the rails are clipped between two plates suitably shaped to embrace the web and the foot or lower head of the rail.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3606.

BŬSCHE, August.—"Improvements in machinery for making laces and braids."

This invention consists in placing the carriers in two concentric circles instead of one, so that the machines will occupy much less space than at present.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, November 26.—N° 3607.

HUGHES, Edward Thomas.—(*A communication from François Bertrand.*)—"Improvements in means "and apparatus for dressing, moulding, and polishing stone, marble, and other similar substances."

This invention consists in placing the stone or other substance on a movable platform or turntable, and causing a suitable tool to revolve against the edge or surface required to be dressed.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 26.—N° 3608.

POLLACK, Heinrich.—"Improvements in breech-loading fire-arms."

This invention consists in the application to breech loading needle guns of a head having a curved projection to be used as a stretching butt, together with various other mechanical appliances, by which means great facility and rapidity of firing is attained.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 26.—Nº 3609.

LAKE, William Robert.—(*A communication from Charles Seymour, Dillingham Clark Washington, and Fitch Raymond.*)—" Improvements in paddle wheels for steamships."

My invention relates to paddles which are so formed as to maintain a vertical position while passing through the water. The said paddles are constructed with trunnions whereby they are supported in the rim of the wheel. The paddles are made straight through their axial line, but on each side of the said line the blades are curved transversely and longitudinally towards their outer edges. The blade is of the same shape on each side of the axis, but its convexity is reversed. If desired the blade may be constructed without any longitudinal curvature.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 26.—Nº 3610.

LAKE, William Robert.—(*A communication from David M. Osborne.*)—" Improvements in harvesting " machines."

The general characteristics of this invention are the use and adaptability of a series of revolving and rising and falling arms which serve for drawing in the standing grain to the cutters, and one of which, at the will of the driver or operator riding on the machine, may be made to act as a rake to sweep the grain from the platform to the ground.

The revolving and rising and falling arms are attached to a disc or wheel which is driven from the main wheel, and are so supported as to be capable of a rolling motion on their axes, and any arm may be raised or lowered while in action. Any of these arms may be adjusted to act as a beater, and camways are so arranged that the arm acting as a rake will pass over the platform at a uniform height, whilst the arms acting as beaters may be raised or lowered in parallel lines to pass over the grain on the platform. The said arms are hung on points remote from the centre of motion of the disc or wheel, so that they drop into their working position in a direction contrary to that in which the wheel is moving, and so that they roll into a position to reach the cam way when used as beaters and pass outside of the same when used as a rake. The journals of the arms are supported upon axles which cross each other, the said axles being bent at the point of intersection, so that the centres of motion of the arms may be all in one plane, whereby they receive a uniform motion from camways which guide them. A sleeve above the wheel is provided with hinged dogs which act in combination with a cam way to enable the driver to throw any arm that has been acting as a rake out of action, or to adjust either of the other arms to act as a rake, while the remaining arms act as beaters. By means of a hinged cam way and lever the beaters may be raised or lowered by the driver. The arms acting as beaters are turned with their backs to meet, the grain being reeled in so that their teeth will not sweep the grain from the platform.

In a modification of my invention the beaters and rakes are hung separately in such manner that they will descend in advance of a line drawn across the centre of the wheel or head, and at a point at which the rakes or beaters are hinged in combination with camways, whereon they travel. I use two permanent cam ways, over one of which the rake passes, while the beaters pass over the other. These cam ways are so arranged that the rake and beaters approach the platform on different planes. An adjustable camway is combined with the permanent camways to raise the rake over the grain on the platform when it is to be used as a beater. Two adjustable camways may be employed to control the rake. The camways are combined with a lever, dog, and trigger, whereby the driver may control the rake. Auxiliary arms and adjustable fastenings are employed in combination with the rake and beater heads to give the heads and arms the required inclination.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, November 26.—Nº 3611.

MORELAND, John Harrison, and CONLONG, James.—" Improvements in pneumatic looms."

The boxes are fitted with cork and capable of contracting in diameter to fit the shuttle, and compressed air is obtained in cylinders or bellows carried by the slay.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 26.—Nº 3612.

HARRIS, Amos.—" Improvements in heating apparatus for warming churches, chapels. and other public " and private buildings by hot air."

This invention consists of air apparatus for warming buildings by hot air, which, with certain arrangements of pipes and ventilators in connection with the same, a equilazition of temperature throughout a building is attained and perfectly safe for boarded floors.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 27.—N° 3613.

STEVENS, Ebenezer.—" Improvements in the means and instruments employed for sharpening knives, " scissors, and other edged tools, and articles of cutlery."

The novelty consists in forming, mounting, arranging, and fixing solid cones out of or from steel, iron, or other suitable hard substances, and fixing them upon a bottom surface or plate without obstructing the working of the knife, &c. between the cones, and not requiring any guide; also, in forming a catch or clasp upon which the cones are attached to slide on and hold fast, and to be removed at pleasure from the spring guard of carving forks, together with improved steel wheels, working upon one axis, and attached to forks; also in forming, arranging, and fixing a conical cone, securing the same, together with two plates, all fast with one pin, screw, or nail only, the surface of the bottom plate forming the rest upon which to sharpen scissors or sheares.

[Printed, 1*s*. Drawing.]

A.D. 1868, November 27.—N° 3614.

TEMPLETON, John Stewart.—" Improvements in Brussels and Wilton carpets."

In Brussels and Wilton carpets as hitherto produced, those portions of the differently colored warps which are not brought to the surface by the jacquard apparatus are confined in the body of the fabric between the wefts; instead of which, they are by the present invention thrown entirely, or to any desired extent, to the under side of the fabric, so as to form a comparatively soft coating on that side.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 27.—N° 3615.

BAMLETT, Adam Carlisle.—" Improvements in machinery for reaping and mowing."

The first part of the invention consists of a sliding segment of a cam applied to that class of reaper with self delivery at the back of the machine which delivers a sheaf for each revolution of the reel, the object of the sliding cam being to make it deliver two sheaves for each revolution of the reel. The segment of a cam is fitted loosely on the reel shaft, and can be placed in working position or withdrawn by a lever similar to a clutch lever.

The second part of the invention consists in placing a small wheel on the outside shoe in advance of the knife, which in crossing furrows prevents the fingers running into the ground; and

The third part of the invention consists in the better lubrication of the bearing where the knife is connected to the connecting rod. That part of the connecting rod is made hollow, thereby causing it to act as an oil cup, and thus lubricating that bearing in a much better manner.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 27.—N° 3616.

WEBB, Thomas George.—" Improvements in the manufacture of tumblers, goblets, wine glasses, and " other vessels or articles of glass, and in tools and instruments or apparatus to be used in such " manufacture."

This invention relates. Firstly, to severing that portion of glass articles which has been attached to the " blowing iron." For this purpose the article is caused to travel in contact with a diamond or a wire heated by electricity. Secondly, in forming " posts " or " pontils " and moulds of carbon and certain metals.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 27.—N° 3617.

PETRIE, John, junior.—(*Provisional protection only.*)—" Improvements in machinery or apparatus for " washing or scouring and dyeing wool and other fibrous materials."

This invention relates. Firstly, to guiding the rakes which lift the material from washing or scouring troughs, so that it may deposit the said material at the further end of the travelling surface. Secondly, to the adaptation of a travelling surface to convey the material from the dye vats to squeezing rollers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 27.—N° 3618.

DICKINS, Thomas, DICKINS, Albert Lungley, and HEYWOOD, Harvey.—" Improvements in " machinery or apparatus for washing and dyeing silk and other yarns."

This invention consists in placing hanks of yarn upon rollers or rods, to which an upward and downward and to and fro motion is imparted in the dye vat.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 27.—N° 3619.

NEWTON, William Edward.—(*A communication from Henry L. Fearing.*)—" Improvements in oil cups " or lubricators for machinery."

A metallic band or collar is cast around and within the neck of a glass reservoir to receive a supporting stem; there is a threaded tube of harder metal for the reception of a screw on the upper end of the stem and a rod to regulate the flow of oil.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 27.—N° 3620.

DALES, John Handsley, and MAYGROVE, John Frederick.—" Improvements in the mode of and " in looms for weaving hair cloth and similar fabrics."

Our improved mode of weaving hair cloth consists in feeding the shuttle with the hairs for forming the weft alternately at either side of the warp, by which means the texture of the cloth is rendered much more uniform than hitherto. To effect this we place a bunch of hairs, with their thick or root ends uppermost, on either side of the loom, each bunch being confined in an elastic collar.

A picker having a grooved end is placed near each bundle of hair. Before the shuttle arrives at one side of the loom the picker on that side is thrust through the bundle of hairs, so that its grooved end catching one hair will protrude it from the bundle in readiness to be seized by the shuttle when it arrives at that side. Each picker is operated either by a projection on a wheel being brought into contact with the picker, or both pickers may be operated alternately by the to and fro motion of the reed.

Near each end of the shuttle is mounted a spring clip to seize the hair protruded by the picker. A rod capable of limited to and fro motion in the shuttle passes through the same, such motion being transmitted by means of a lever to a second rod mounted between the tail ends of the two clips. Thus on the first rod being moved the second rod will be moved in the contrary direction and close the clip towards which it moves. This takes place by the impact of the shuttle at the end of its course, the clip closing on the hair protruded by the picker, to carry it across the warp, at the same time that the hair which has been drawn through the warp by the other clip is released.

Another arrangement consists in dispensing with the pickers and providing the ends of the shuttle with hooks, which are thrust into the bundles to seize a hair. A spring piece sliding on the hook secures the hair thereon; the two pieces being jointed to a transverse lever are operated simultaneously, the one for seizing and the other for releasing a hair. The shuttle may be otherwise arranged if desired for the purpose of receiving the hair alternately at opposite sides of the warp, as before described.

[Printed, 1*s*. Drawing.]

A.D. 1868, November 27.—N° 3621.

CLARK, Alexander Melville.—(*A communication from Adolphe Charles Guillemot.*)—" Improvements " in letter or paper clips."

According to one arrangement I fix a plate at one end to a backing or stand, to which a spring is attached, pressing up the plate against a clip jointed to the stand or backing. On bearing with the hand on the plate the latter is depressed and the clip raised for placing the papers in position, and on releasing the said plate the papers will be secured between the clip and plate.

In a modified arrangement the clip is made to turn at right angles to the plate instead of being hinged in a parallel line thereto.

Lastly, an arrangement is described in which four clips are mounted on a frame provided with a ratchet and pawl at each end. On depressing the plate before mentioned the frame moves a fourth of a turn, carrying with it a clip, the succeeding clip coming into position for holding the papers when the spring plate is released from the pressure of the hand.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 28.—N° 3622.

TRANTER, William.—" Improvements in breech-loading fire-arms, and in lubricating bullets for the " same."

First. A breech loading gun with a sliding block and lock moving in a solid frame perpendicularly and at right angles to the bore of the barrel by means of the guard acting in a slot or opening made in the frame which is formed in such a manner as to admit of the stock being made in one piece. A cartridge extractor with a curved end is fitted to act either inside or outside of the frame.

Secondly, a double barrelled pistol with a projection on the outer side of each barrel for a breech closer to act against. This breech closer is a block pivoted at one end and locked at the other by a jointed link serving also as a lever to raise the block.

Thirdly, breech loading revolver pistols with a jointed frame and the revolving chamber adapted to act in connection with the barrel in front by means of a centre rod and clip. A cartridge extractor fitted into the breech end of the chamber is worked by moving the centre rod.

Fourthly. Extracting cartridge cases by a rod made to move in a socket jointed to the frame of the pistol, such rod when not in use lying embedded in the said frame.

Fifthly. Lever for fixing the barrels of a rifle described in No. 2113 (1865), connected to a pin solid with a lever formed to move on the side of the frame.

Sixthly. Lubricating bullets with the lubricant applied flush with a swell at the base of the bullet, and filling up the space between the said swell and the end of the cartridge case.

Lastly. Applying the lubricant by means of a tube with a hole at the top for the entrance of the material, and another at the under side for the exit of air, and another tube (with a plunger in it) at right angles to the before named tube.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, November 28.—N° 3623.

INGHAM, JOHN, and BUTTERFIELD, ILLINGWORTH.—(*Letters Patent void for want of Final Specification.*)—" Improvements in machinery or apparatus for dressing warps."

The object of this invention is the dressing or preparing warp for the loom after the process of sizeing, dyeing, or bleaching, or any other process which causes the " ends " or threads to adhere together.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 28.—N° 3624.

SAMUELL, EDWARD SIMPSON.—(*Provisional protection only.*) — " An improved manufacture of super-" phosphate of lime."

The object, to utilize those phosphatic deposits found in this country in the silurian strata. For this purpose I reduce the phosphatic mineral to powder and then treat it with (a) sulphuric acid and muriatic acid, or (b) sulphuric acid and chloride of sodium.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 28.—N° 3625.

WYLLIE, ANDREW, and LATHAM, JAMES.—" An improved machine for cracking palm and other nuts."

The object, to crack palm and other nuts with excessively hard shells economically.

For this purpose we support on strong framework, by a hinge or otherwise, a serrated plate capable of being adjusted by a set screw or its equivalent to any desired angle. Opposite to the said serrated plate we support in a similar manner another and like serrated plate, to which we give a reciprocating or vibratory motion by an excentric or crank coupled to or connected with it, the latter being operated by or from any convenient power. Every time, therefore, when the machine is at work, the vibrating serrated plate makes a double stroke a number of nuts are cracked. By adjusting the serrated plates at an angle to each other nuts of different sizes can be cracked at the same time.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 28.—N° 3626.

KING, HENRY JAMES HOGG.—" Improvements in gauges or apparatus for ascertaining pressure."

This invention relates partly to Patent No. 1606, 1868, and a part of it consists principally in providing for checking the gauges at any time by originally marking a secondary or checking scale on the dial in addition to the ordinary scale, and by fitting a hook or ring in connection with the indicating mechanism, on which hook or ring a predetermined weight may be hung.

A second part of the invention consists in providing for checking pressure gauges of the kinds hereinbefore referred to by means of weights, which when applied should move the index to zero (or other suitable point), the said weights being selected to correspond with the pressure acting in the gauge.

A third part of the invention relates to improvements in the details of the mercurial pressure gauge described in the earlier Specification.

[Printed, 10*d*. Drawing.]

hitherto proposed or employed. The winder is formed by the back of the case itself, whic movable and acts on the ratchet of the barrel, which in this case is brought to the centre of the w

The setting of the hands is effected by the following combination:—The pendent has a passing through it terminated by a milled edged button; its inner end is squared and carri which gears (when the hands are to be set) with a wheel in connection with the minute w socket of which latter the hour wheel turns. The socket of the first-named pinion has a which the end of a spring takes in such a manner as to hold the pinion always raised out the wheel, excepting when the hands are required to be set, when the spring is depressed pin or pusher which projects through the rim of the case.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 25.—N° 3578.

PARRY, John.—"Improvements in springs, and in the application of the same to mattresses, c "other upholstery purposes."

This invention applies to coiled or spiral springs used for mattrasses, couches, sofas, chairs, c other seats, and for other similar upholstery purposes; and consists chiefly in protecting the spring by means of a top or cap of wood, metal, or other suitable substance, which top or preferably of a mushroom form, but it may be made oval, octagonal, or of other convenient shap

The object of this arrangement is to prevent the top of the spring from wearing through t material (where a cover is used), and at the same time to leave each spring perfectly free and i of the rest, so that each spring acts separately and bears its own separate amount of pressure.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 25.—N° 3579.

LAKIN, Robert, and RHODES, William Henry.—"Improvements in machines for spi "doubling."

This invention is applicable to the machines for spinning and doubling known as self acting it consists,—

First, in connecting the under faller lever and brake lever by means of a spring instead of a cha

Secondly, in attaching the tension pulley used for tightening the rim band to one end of a le the other end of the lever applying a spring to keep the band tight.

Thirdly, in an improved combination of machinery for locking the faller.

Fourthly, in an improved combination of machinery to obviate breakages which sometimes aris mule fails to make the required changes in the back or drawing out shaft.

Fifthly, in certain improvements in the machinery for driving the cam shaft and parts therewith.

Sixthly, in certain improvements applicable to Roberts self acting mules, consisting in the app a sliding segmental wheel to the cam shaft, and in connecting the backing off lever to the strap sliding bar; also in applying a vertical shaft for taking the backing off friction cone out of co putting the taking in catch box into gear.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 25.—N° 3580.

WILD, William.—(*Provisional protection only.*)—"An improved arrangement and adaptation of m "to the driving shafts of motive-power engines to be employed for equalizing and regulating the "such shafts."

The novelty of the invention consists in connecting with the driving shafts of motive power coiled or spiral spring enclosed in annular space formed by the placing together of two vices, one is keyed or otherwise secured to the drawing shaft and the other connected to the wheel dri machinery, both of which, the lower dice and the wheel, run lose upon the shaft and are driven thro medium of the elastic spring, thus giving a compensating motion to the machinery that prevents uns and "backlash."

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 25.—N° 3581.

BERNHARDT, George.—"Improvements in arrangements and apparatus for regulating and econ "the supply of gas in mills and manufactories." The invention consists in self-acting arrangeme

nnected with the driving power which will turn on the full pressure and supply of the gas when power is set to work and turn it off when the driving power stops, leaving only a minimum s when the driving power is not in motion.
d. Drawing.]

A.D. 1868, November 25.—N° 3582.

OMAS.—" Improvements in the means or apparatus for hanging and supporting windows, tters, and other such like moveable fittings in houses, vehicles, steamboats, and other places or in which such fittings are used."
tion is designed to supersede the present cumbrous and expensive apparatus of cords, pulleys, by substituting two or more moveable rollers or wheels of india rubber or other elastic substance l, which are intended to work in a groove cut in either the frame or the sash of a window or ble fitting, the said rollers or wheels being to a certain extent compressed, acting as a kind of o support the window or other moveable fitting when at rest and as a travelling roller when e chief characteristics of this invention are its simplicity, cheapness, and durability.
l. Drawing.]

A.D. 1868, November 25.—N° 3583.

PHILLIPS.—(*Provisional protection only.*)—" An improved mode of preparing or making up e or preparations or compounds of indigo for the market."
o, instead of being made into balls or "thumbs" as usual, is spread on sheets of paper or

d. No Drawings.]

A.D. 1868, November 25.—N° 3584.

LIAM ROBERT.—(*A communication from Richard Austin Bright, junior, and Lucien Bonaparte* mprovements in machinery for manufacturing cigars."
ine is constructed with a main or stationary frame, which carries two rollers; with these rollers l three other rollers carried in an adjustable frame. The said rollers have concave surfaces and re formd between them. The cigars are pointed in a cone-shaped header, and their length is means of a sliding follower. The follower is fitted on the end of a short horizontal spindle, and ling by a spring. The header is attached to a pin or rod and kept from turning by projecting nife or cutter is carried on a swinging arm pivotted to the adjustable frame. The knife is kept ght on the arm and is caused to descend to cut the cigars.
0d. Drawing.]

A.D. 1868, November 25.—N° 3585.

CIPIO, and THOMPSON, CHARLES.—" Improvements in looms for weaving."
ation relates to means of acting upon the "swell" so as not to press upon the shuttle at any immediately after the said shuttle has got into the box, and which is relieved again before ttle is "picked" or sent out of the box.
d. Drawing.]

A.D. 1868, November 25.—N° 3586.

ANIEL SAMUEL.—(*Provisional protection only.*)—" Improvements in arm protectors."
purpose a covering for the arm is formed of leather or other suitable waterproof or fireproof combination of materials to fit closely round the wrist by means of an elastic gusset or hooks, buckles, or other suitable means applied at that part. These protectors may extend from the wrist, or they may be made long enough to protect the arm from the shoulder downwards to which case, when made of rigid or comparatively rigid material, it will be made in two parts ogether at the elbow by means of a suitable elastic or flexible tube or connection.
d. No Drawings.]

A.D. 1868, November 25.—N° 3587.

, WILLIAM FLOYD.—(*Provisional protection only.*)—" Improvements in packing boxes or ases."
to this invention the packing box or packing case is made of a series of trays or shallow boxes which are piled upon one another. The bottom tray has a vertical rod at the outside of each

end, and the other trays have eyes or loops at either end, through which the vertical rods pass when the trays are piled upon one another.

The top tray is covered by a lid having a flat cross rod, through eyes in the ends of which the vertical rods pass.

The series of trays and the lid are secured together by means of screw nuts screwed on the tops of the vertical rods described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3588.

BAKER, GEORGE, the younger.—" Improvements in bird and other cages."

One part of this invention consists in making the bottoms of bird and other cages of papier mâché. Another part consists in securing the bodies of bird and other cages to the bottoms made either of papier mâché or metal by forming a raised concentric rim or ring near the edge of the bottom, around which rim the bottom band of the body of the cage is fixed by tongues and a spring catch fastening on the rim or ring.

Another part consists in making the cups and doors of bird and other cages self-closing by means of coiled or helical springs, so that when the said cups and doors are loosed by the hand they close and snap into their fixed positions, and thereby prevent the escape of the bird or animal.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 25.—N° 3589.

GEDGE, WILLIAM EDWARD.—(*A communication from Antoine Faurie*.)—(*Provisional protection only*.)—" A novel system of tug or tow boat."

The tug of this invention derives its motive power from the stream itself, and may be either travelling or stationary. In the first case it can only tow up stream, but in the latter it tows both up and down.

An endless chain or cable thrown into the water-course along the whole line to be worked and fixed only at the up stream end serves as fulcrum to the travelling tug, the traction of which it resists by its weight alone. This traction is brought upon the chain by passing it over pullies on the tug, this latter consisting of two boats carrying between them a paddle wheel, which revolving under the pressure of the current causes the pulleys to nip the chain and draw the tug along it up stream together with the vessels or load it may have in tow. To descend the stream the tug is freed from the chain and simply floats with the current.

To tow both up and down stream these tugs are arranged in echelon, being stationed at the parts of the stream where the current is most rapid and placed in connection by an endless chain set in motion by the action of the current on the paddle wheels of the tugs and acting as a driving band on horizontal pulleys carrying it on edge. This chain is furnished at certain distances with rings to which the boats or loads to be towed are hooked on.

These tugs carry any number of paddle wheels according to their length, these wheels being sometimes divided in the centre into two parts between which the driving pulley is placed (or this latter is carried on a separate shaft), and the number of paddles or floats is regulated by the size of the wheel.

The travelling tug is made of sheet iron, and as light as possible in order that it may absorb in towing itself as little as possible of the power it derives from the current.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3590.

GEDGE, WILLIAM EDWARD.—(*A communication from Antoine Bounaz*.)—" Improvements in sewing or " embroidering machines."

The object of these improvements is to permit curves and patterns of the most intricate description to be embroidered upon a fabric without the necessity of constantly turning the entire fabric in conformity with the pattern.

The improvements consist,—

Firstly, in combining the needle, looper, and feed surface motions of the machine in such a manner that they may be turned in any direction without changing their relative positions.

Secondly, in a mechanical arrangement by which the combined movements of the needle, looper, and feed surface are produced.

Thirdly, in a coupling and uncoupling device permitting the feed motion to be changed or reversed without arresting the motive power or touching the fabric which is being operated upon.

[Printed, 2*s*. 10*d*. Drawings.]

A.D. 1868, November 25.—N° 3591.

SMITH, Hugh.—(*Provisional protection only.*)—" Improvements in apparatus to be used in playing " games."

This Provisional Specification describes a block of a polygonal form which is padded round the edges with elastic material. The block is used with a cloth or table cover which is marked and divided to suit the game to be played upon it. The games are played with balls.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3592.

VAN HECKE, Englebert Théophile.—" Improvements in steam boilers."

The novelty of this invention consists in so constructing a vertical boiler as that the heat from the fire shall first ascend through the inside of the boiler, then pass over the top thereof and descend around the outside, before it escapes into the chimney; the boiler and fire box are cylindrical, the fire box being within the boiler.

Another feature of novelty consists in making the bottom of the boiler at a lower level than the top of the fire bars, by which, burniug of this part of the boiler and explosion thereof is prevented.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 25.—N° 3593.

SPARTALI, Nicholas Demetrius.—" Improvements in the mode of obtaining and in apparatus for " applying heat to steam boilers."

The liquid fuel is forced (in the form of spray) into the fire flues of auxiliary and main boilers by high pressure steam or heated air admitted to the feed pipe in rear of the mouth or discharging end; air may also be admitted direct to the fire flue to fan the flame of the ignited fuel and increase its intensity if required.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 25.—N° 3594.

BOURNE, John.—" Improvements in the production of heat, and in the generation and application of " motive power derived therefrom."

Generating heat by blowing coal or other combustibles into a combustion chamber; also obtaining power from the heat generated by such combustion by saturating the heated gases with steam or water.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, November 25.—N° 3595.

MILSTED, Henry.—(*Provisional protection only.*) —" An improved buckle or fastening especially appli- " cable to belts, bands, straps, traces, and thongs."

The buckle or fastening consists of two parts combined; that is to say, the sides or lateral arms of the frame of the buckle instead of being, as is usual, each in a solid or continuous piece, are spring arms or sides; each such side consists of a rod, bar, or arm entering a hollow or tubular rod, bar, or arm, and used in combination with a spring. The tubular arms are capable of sliding on or over the inner arms, or the inner arms of sliding in the tubular arms; one part of the buckle frame thus consists of an end bar or end piece, and of two hollow or tubular arms or sides, while the other part consists of an end piece and of two arms or sides entering the hollow or tubular arms or sides and combined with springs, a prong or tongue being on one of the end bars.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3596.

LAKE, William Robert.—(*A communication from Sherman Minor Johnson, Malcolm Clark Turner, and Robert Turner.*)—" Improvements in sad irons, and in the means for heating the same."

This invention consists, first, in the combination with a reversible sad-iron provided with a suitable burner of a reservoir for containing oil or other hydro-carbon liquid, so connected to the said sad-iron as to supply the burner with the necessary quantity of the oil or other hydro-carbon liquid; it also consists in the combination with the said reservoir and sad-iron of devices or mechanism for heating the iron by generating and burning within the same the vaporous products of the oil or other hydro-carbon liquid; also in a burner of novel construction, with which is combined a vapor-generating chamber; it also consists in the arrangement of a valve and means for operating the same, whereby the flow of the hydro-carbon liquid may be regulated as desired; also in constructing the inner surfaces of the smoothing plates of the iron with radial corrugations, whereby a more uniform heating of the smoothing plates of the iron is effected.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 25.—N° 3597.

VOGL, David.—(*A communication from Albert Schmidt.*)—(*Provisional protection only.*)—" An improvement " in the means of fastening scarfs, neckties, and cravats."

For fastening the neckband or sliding piece to the main part of the scarf, necktie, or cravat an appliance is used consisting of two bars or plates, one of which is mounted in or suspended or jointed to the other, the first plate having at the top edge projections which work like axes or pivots in bearings formed in bent up or projecting portions at the top of the other plate or bar. It is preferred to form the first named plate with slanting sides so that it lies obliquely on the other plate. One plate is attached to the body or knot of the scarf or cravat, and the end of the neckband or slide is passed between the plates and thereby fastened in position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 25.—N° 3598.

ELLENBAND, Elias.—(*A communication from Jacob Huzarski.*)—(*Provisional protection only.*)—" Improved apparatus for threading domestic needles."

The features of novelty in this invention consist in the form and arrangement of passages constructed in a metallic tip, one of which passages may be provided with a ratchet or crochet bar, the whole being affixed to a pencil or needle case, or provided with a separate handle as and for the purposes described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3599.

ROMAN, Louis.—(*Provisional protection only.*)—" An hydraulic motive power."

The invention consists in obtaining motive power from rivers or other streams of running water by means of an endless chain formed of flat iron bars with articulated joints and curved paddles, which endless chain revolves over drums, pulleys, or wheels, and is left partly immersed in the water in the direction of the current, which latter by acting on the immersed paddles of the endless chain will procure the revolution of this latter and of its drums, pulleys, or wheels and thus create a motive power for driving machinery or other similar purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3600.

HOLT, Francis.—" Certain improvements in 'steam' engines."

My invention consists, first, of an improved lubricator applicable to the cylinders and other parts of steam engines; the vessel containing the lubricant is provided with two valves, the spindles of which are screwed together; these valves are opened and closed by turning the spindle of the upper one.

Secondly, of an improved metallic packing for the stuffing boxes of steam engines, the packing rings are cut through in one place, and they fit in a conical bush loose in the stuffing box.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 26.—N° 3601.

PANTON, Patrick.—(*Provisional protection only.*)—" Improvements in fire-arms."

This invention relates to the ignition of the charge of fire arms, and it has for its object to effect the ignition by friction instead of percussion so that the shock of percussion may be avoided and the force necessary for firing may be diminished.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 26.—N° 3602.

CLARK, Alexander Melville.—(*A communication from Pierre Joseph Alexis Mandet.*)—" An improved " preparation or compound for sizing and dressing threads and fabrics."

The preparation is formed by the combination or mixture of the following substances:—

Gelatine.
Dextrine.
Sulphate of zinc.
Glycerine.
Chloride of calcium.

Spermaceti.
Phenic acid.
Caustic soda.
Syrup of fecula.
Stearine.
Starch.

These materials are reduced to a pasty or gelatinous condition by boiling in water, and applied for sizing and dressing threads and fabrics of animal or vegetable nature.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 26.—N° 3603.

SINCOCK, John.—" Improvements in ratchet braces, which improvements are also applicable to ordinary " ratchet levers and ratchet wheels generally."

This invention relates to a peculiar construction of ratchet braces whereby increased strength, simplicity, power, and durability are obtained; and consists in the employment of a sliding pall acted upon by a helical spring inclosed in a spring box, which is removeable for actuating the ratchet wheel of a ratchet brace. The sliding pall, spring, and spring box are all contained in the head of the actuating lever of the brace, and access can be readily obtained by removing the hoop or bush which serves to keep the ratchet wheel in its place. This hoop is held in its place by two or more screws, on removing which all the parts can be readily taken out. By this arrangement the pall remains constantly in contact with the ratchet wheel, and consequently all possibility of slip is prevented and a dead pull with an entire absence of back lash or looseness is insured. The working parts are moreover wholly inclosed, and being wrought iron their durability is increased by casehardening them. This arrangement is applicable to ordinary ratchet levers and other purposes where ratchet wheels are employed.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 26.—N° 3604.

SWITHENBANK, Henry.—(*Partly a communication from Charles Columba.*)—(*Provisional protection only.*)—" Improvements in apparatus to be used in the manufacture and finishing of hats."

This Provisional Specification describes an improved construction of the hatter's tool called a potence.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 26.—N° 3605.

SPOONER, Charles Easton, and HUDDART, George Augustus.—(*Provisional protection only.*)— " Improvements in the construction of railways."

The abutting ends of the rails are clipped between two plates suitably shaped to embrace the web and the foot or lower head of the rail.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 26.—N° 3606.

BÜSCHE, August.—" Improvements in machinery for making laces and braids."

This invention consists in placing the carriers in two concentric circles instead of one, so that the machines will occupy much less space than at present.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, November 26.—N° 3607.

HUGHES, Edward Thomas.—(*A communication from François Bertrand.*)—" Improvements in means " and apparatus for dressing, moulding, and polishing stone, marble, and other similar substances."

This invention consists in placing the stone or other substance on a movable platform or turntable, and causing a suitable tool to revolve against the edge or surface required to be dressed.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 26.—N° 3608.

POLLACK, Heinrich.—" Improvements in breech-loading fire-arms."

This invention consists in the application to breech loading needle guns of a head having a curved projection to be used as a stretching butt, together with various other mechanical appliances, by which means great facility and rapidity of firing is attained.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 26.—N° 3609.

LAKE, William Robert.—(*A communication from Charles Seymour, Dillingham Clark Washington, and Fitch Raymond.*)—" Improvements in paddle wheels for steamships."

My invention relates to paddles which are so formed as to maintain a vertical position while passing through the water. The said paddles are constructed with trunnions whereby they are supported in the rim of the wheel. The paddles are made straight through their axial line, but on each side of the said line the blades are curved transversely and longitudinally towards their outer edges. The blade is of the same shape on each side of the axis, but its convexity is reversed. If desired the blade may be constructed without any longitudinal curvature.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 26.—N° 3610.

LAKE, William Robert.—(*A communication from David M. Osborne.*)—" Improvements in harvesting " machines."

The general characteristics of this invention are the use and adaptability of a series of revolving and rising and falling arms which serve for drawing in the standing grain to the cutters, and one of which, at the will of the driver or operator riding on the machine, may be made to act as a rake to sweep the grain from the platform to the ground.

The revolving and rising and falling arms are attached to a disc or wheel which is driven from the main wheel, and are so supported as to be capable of a rolling motion on their axes, and any arm may be raised or lowered while in action. Any of these arms may be adjusted to act as a beater, and camways are so arranged that the arm acting as a rake will pass over the platform at a uniform height, whilst the arms acting as beaters may be raised or lowered in parallel lines to pass over the grain on the platform. The said arms are hung on points remote from the centre of motion of the disc or wheel, so that they drop into their working position in a direction contrary to that in which the wheel is moving, and so that they roll into a position to reach the cam way when used as beaters and pass outside of the same when used as a rake. The journals of the arms are supported upon axles which cross each other, the said axles being bent at the point of intersection, so that the centres of motion of the arms may be all in one plane, whereby they receive a uniform motion from camways which guide them. A sleeve above the wheel is provided with hinged dogs which act in combination with a cam way to enable the driver to throw any arm that has been acting as a rake out of action, or to adjust either of the other arms to act as a rake, while the remaining arms act as beaters. By means of a hinged cam way and lever the beaters may be raised or lowered by the driver. The arms acting as beaters are turned with their backs to meet, the grain being reeled in so that their teeth will not sweep the grain from the platform.

In a modification of my invention the beaters and rakes are hung separately in such manner that they will descend in advance of a line drawn across the centre of the wheel or head, and at a point at which the rakes or beaters are hinged in combination with camways, whereon they travel. I use two permanent cam ways, over one of which the rake passes, while the beaters pass over the other. These cam ways are so arranged that the rake and beaters approach the platform on different planes. An adjustable camway is combined with the permanent camways to raise the rake over the grain on the platform when it is to be used as a beater. Two adjustable camways may be employed to control the rake. The camways are combined with a lever, dog, and trigger, whereby the driver may control the rake. Auxiliary arms and adjustable fastenings are employed in combination with the rake and beater heads to give the heads and arms the required inclination.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, November 26.—N° 3611.

MORELAND, John Harrison, and CONLONG, James.—" Improvements in pneumatic looms."

The boxes are fitted with cork and capable of contracting in diameter to fit the shuttle, and compressed air is obtained in cylinders or bellows carried by the slay.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 26.—N° 3612.

HARRIS, Amos.—" Improvements in heating apparatus for warming churches, chapels. and other public " and private buildings by hot air."

This invention consists of air apparatus for warming buildings by hot air, which, with certain arrangements of pipes and ventilators in connection with the same, a equilazition of temperature throughout a building is attained and perfectly safe for boarded floors.

[Printed, 1*s*. Drawings.]

A.D. 1868, November 27.—N° 3613.

STEVENS, Ebenezer.—"Improvements in the means and instruments employed for sharpening knives, "scissors, and other edged tools, and articles of cutlery."

The novelty consists in forming, mounting, arranging, and fixing solid cones out of or from steel, iron, or other suitable hard substances, and fixing them upon a bottom surface or plate without obstructing the working of the knife, &c. between the cones, and not requiring any guide; also, in forming a catch or clasp upon which the cones are attached to slide on and hold fast, and to be removed at pleasure from the spring guard of carving forks, together with improved steel wheels, working upon one axis, and attached to forks; also in forming, arranging, and fixing a conical cone, securing the same, together with two plates, all fast with one pin, screw, or nail only, the surface of the bottom plate forming the rest upon which to sharpen scissors or sheares.

[Printed, 1s. Drawing.]

A.D. 1868, November 27.—N° 3614.

TEMPLETON, John Stewart.—"Improvements in Brussels and Wilton carpets."

In Brussels and Wilton carpets as hitherto produced, those portions of the differently colored warps which are not brought to the surface by the jacquard apparatus are confined in the body of the fabric between the wefts; instead of which, they are by the present invention thrown entirely, or to any desired extent, to the under side of the fabric, so as to form a comparatively soft coating on that side.

[Printed, 10d. Drawing.]

A.D. 1868, November 27.—N° 3615.

BAMLETT, Adam Carlisle.—"Improvements in machinery for reaping and mowing."

The first part of the invention consists of a sliding segment of a cam applied to that class of reaper with self delivery at the back of the machine which delivers a sheaf for each revolution of the reel, the object of the sliding cam being to make it deliver two sheaves for each revolution of the reel. The segment of a cam is fitted loosely on the reel shaft, and can be placed in working position or withdrawn by a lever similar to a clutch lever.

The second part of the invention consists in placing a small wheel on the outside shoe in advance of the knife, which in crossing furrows prevents the fingers running into the ground; and

The third part of the invention consists in the better lubrication of the bearing where the knife is connected to the connecting rod. That part of the connecting rod is made hollow, thereby causing it to act as an oil cup, and thus lubricating that bearing in a much better manner.

[Printed, 8d. Drawing.]

A.D. 1868, November 27.—N° 3616.

WEBB, Thomas George.—"Improvements in the manufacture of tumblers, goblets, wine glasses, and "other vessels or articles of glass, and in tools and instruments or apparatus to be used in such "manufacture."

This invention relates. Firstly, to severing that portion of glass articles which has been attached to the "blowing iron." For this purpose the article is caused to travel in contact with a diamond or a wire heated by electricity. Secondly, in forming "posts" or "pontils" and moulds of carbon and certain metals.

[Printed, 10d. Drawing.]

A.D. 1868, November 27.—N° 3617.

PETRIE, John, junior.—(*Provisional protection only.*)—"Improvements in machinery or apparatus for "washing or scouring and dyeing wool and other fibrous materials."

This invention relates. Firstly, to guiding the rakes which lift the material from washing or scouring troughs, so that it may deposit the said material at the further end of the travelling surface. Secondly, to the adaptation of a travelling surface to convey the material from the dye vats to squeezing rollers.

[Printed, 4d. No Drawings.]

A.D. 1868, November 27.—N° 3618.

DICKINS, Thomas, **DICKINS**, Albert Lungley, and **HEYWOOD**, Harvey.—"Improvements in "machinery or apparatus for washing and dyeing silk and other yarns."

This invention consists in placing hanks of yarn upon rollers or rods, to which an upward and downward and to and fro motion is imparted in the dye vat.

[Printed, 10d. Drawing.]

A.D. 1868, November 27.—N° 3619.

NEWTON, William Edward.—(*A communication from Henry L. Fearing.*)—" Improvements in oil cups " or lubricators for machinery."

A metallic band or collar is cast around and within the neck of a glass reservoir to receive a supporting stem; there is a threaded tube of harder metal for the reception of a screw on the upper end of the stem and a rod to regulate the flow of oil.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 27.—N° 3620.

DALES, John Handsley, and MAYGROVE, John Frederick.—" Improvements in the mode of and " in looms for weaving hair cloth and similar fabrics."

Our improved mode of weaving hair cloth consists in feeding the shuttle with the hairs for forming the weft alternately at either side of the warp, by which means the texture of the cloth is rendered much more uniform than hitherto. To effect this we place a bunch of hairs, with their thick or root ends uppermost, on either side of the loom, each bunch being confined in an elastic collar.

A picker having a grooved end is placed near each bundle of hair. Before the shuttle arrives at one side of the loom the picker on that side is thrust through the bundle of hairs, so that its grooved end catching one hair will protrude it from the bundle in readiness to be seized by the shuttle when it arrives at that side. Each picker is operated either by a projection on a wheel being brought into contact with the picker, or both pickers may be operated alternately by the to and fro motion of the reed.

Near each end of the shuttle is mounted a spring clip to seize the hair protruded by the picker. A rod capable of limited to and fro motion in the shuttle passes through the same, such motion being transmitted by means of a lever to a second rod mounted between the tail ends of the two clips. Thus on the first rod being moved the second rod will be moved in the contrary direction and close the clip towards which it moves. This takes place by the impact of the shuttle at the end of its course, the clip closing on the hair protruded by the picker, to carry it across the warp, at the same time that the hair which has been drawn through the warp by the other clip is released.

Another arrangement consists in dispensing with the pickers and providing the ends of the shuttle with hooks, which are thrust into the bundles to seize a hair. A spring piece sliding on the hook secures the hair thereon; the two pieces being jointed to a transverse lever are operated simultaneously, the one for seizing and the other for releasing a hair. The shuttle may be otherwise arranged if desired for the purpose of receiving the hair alternately at opposite sides of the warp, as before described.

[Printed, 1*s.* Drawing.]

A.D. 1868, November 27.—N° 3621.

CLARK, Alexander Melville.—(*A communication from Adolphe Charles Guillemot.*)—" Improvements " in letter or paper clips."

According to one arrangement I fix a plate at one end to a backing or stand, to which a spring is attached, pressing up the plate against a clip jointed to the stand or backing. On bearing with the hand on the plate the latter is depressed and the clip raised for placing the papers in position, and on releasing the said plate the papers will be secured between the clip and plate.

In a modified arrangement the clip is made to turn at right angles to the plate instead of being hinged in a parallel line thereto.

Lastly, an arrangement is described in which four clips are mounted on a frame provided with a ratchet and pawl at each end. On depressing the plate before mentioned the frame moves a fourth of a turn, carrying with it a clip, the succeeding clip coming into position for holding the papers when the spring plate is released from the pressure of the hand.

[Printed, 1*s.* Drawings.]

A.D. 1868, November 28.—N° 3622.

TRANTER, William.—" Improvements in breech-loading fire-arms, and in lubricating bullets for the " same."

First. A breech loading gun with a sliding block and lock moving in a solid frame perpendicularly and at right angles to the bore of the barrel by means of the guard acting in a slot or opening made in the frame which is formed in such a manner as to admit of the stock being made in one piece. A cartridge extractor with a curved end is fitted to act either inside or outside of the frame.

Secondly, a double barrelled pistol with a projection on the outer side of each barrel for a breech closer to act against. This breech closer is a block pivoted at one end and locked at the other by a jointed link serving also as a lever to raise the block.

Thirdly, breech loading revolver pistols with a jointed frame and the revolving chamber adapted to act in connection with the barrel in front by means of a centre rod and clip. A cartridge extractor fitted into the breech end of the chamber is worked by moving the centre rod.

Fourthly. Extracting cartridge cases by a rod made to move in a socket jointed to the frame of the pistol, such rod when not in use lying embedded in the said frame.

Fifthly. Lever for fixing the barrels of a rifle described in No. 2113 (1865), connected to a pin solid with a lever formed to move on the side of the frame.

Sixthly. Lubricating bullets with the lubricant applied flush with a swell at the base of the bullet, and filling up the space between the said swell and the end of the cartridge case.

Lastly. Applying the lubricant by means of a tube with a hole at the top for the entrance of the material, and another at the under side for the exit of air, and another tube (with a plunger in it) at right angles to the before named tube.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, November 28.—N° 3623.

INGHAM, **John**, and **BUTTERFIELD**, **Illingworth**.—(*Letters Patent void for want of Final Specification.*)—" Improvements in machinery or apparatus for dressing warps."

The object of this invention is the dressing or preparing warp for the loom after the process of sizeing, dyeing, or bleaching, or any other process which causes the " ends " or threads to adhere together.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 28.—N° 3624.

SAMUELL, **Edward Simpson**.—(*Provisional protection only.*) — " An improved manufacture of super-" phosphate of lime."

The object, to utilize those phosphatic deposits found in this country in the silurian strata. For this purpose I reduce the phosphatic mineral to powder and then treat it with (a) sulphuric acid and muriatic acid, or (b) sulphuric acid and chloride of sodium.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 28.—N° 3625.

WYLLIE, **Andrew**, and **LATHAM**, **James**.—" An improved machine for cracking palm and other nuts."

The object, to crack palm and other nuts with excessively hard shells economically.

For this purpose we support on strong framework, by a hinge or otherwise, a serrated plate capable of being adjusted by a set screw or its equivalent to any desired angle. Opposite to the said serrated plate we support in a similar manner another and like serrated plate, to which we give a reciprocating or vibratory motion by an excentric or crank coupled to or connected with it, the latter being operated by or from any convenient power. Every time, therefore, when the machine is at work, the vibrating serrated plate makes a double stroke a number of nuts are cracked. By adjusting the serrated plates at an angle to each other nuts of different sizes can be cracked at the same time.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 28.—N° 3626.

KING, **Henry James Hogg**.—" Improvements in gauges or apparatus for ascertaining pressure."

This invention relates partly to Patent No. 1606, 1868, and a part of it consists principally in providing for checking the gauges at any time by originally marking a secondary or checking scale on the dial in addition to the ordinary scale, and by fitting a hook or ring in connection with the indicating mechanism, on which hook or ring a predetermined weight may be hung.

A second part of the invention consists in providing for checking pressure gauges of the kinds hereinbefore referred to by means of weights, which when applied should move the index to zero (or other suitable point), the said weights being selected to correspond with the pressure acting in the gauge.

A third part of the invention relates to improvements in the details of the mercurial pressure gauge described in the earlier Specification.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 28.—Nº 3627.

CORNES, John.—(*Provisional protection only.*)—" Improvements in machines for mowing grass, corn " crops, and other similar produce, for trimming the margins of lawns; also for rolling, collecting, and " delivering the said crops of corn and other produce into bonds or bands ready for being tied up in sheaves " or laid in swarth."

The novelty in this case consists, first, in making the spiral cutters elevate the crop; and, secondly, in fitting a vertical cutter, at the end of the spiral cutter, for cutting the edges of lawns and grass.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 28.—Nº 3628.

BURTON, Alfred Neville.—" An improved metallic eyelet."

The hole or tube of the said eyelets through which the cord or lace is passed is curved; from this curved portion extends a shank or stem whereby the eyelet is secured. In applying these eyelets to boots and other articles of dress I place them opposite each, otherwise flatwise on the two sides to be united, the curved tubes of each pair of eyelets when drawn together forming a complete circle. The lace is then run through the entire series of eyelets, and may be tightened by pulling its loose end.

[Printed, 6*d*. Drawing.]

A.D. 1868, November 28.—Nº 3629.

GEDGE, William Edward.—(*A communication from Paul Gelibert.*)—" An improved instrument " intended to facilitate the execution of perspective drawings."

This instrument is single or double. A single perspectometer consists of a small scale or graduated rule divided into 100 equal parts; a double one, of two scales of equal length placed at right angles to each other.

To draw with the perspectometer it is necessary to retire from the object to be drawn until it can be entirely embraced closing one eye and keeping the arm stretched without effort. In using the double perspectometer the outer angle of the instrument is brought on the desired point, and the number which lies between its outer vertical line and under its horizontal base determines the perspective. A regulator is provided shifting up and down according to the height of the model which is placed in a perspectometrical guide frame. The proportions of a drawing may be varied without making the usual calculations by means of pieces of perspectometrically proportioned cardboard placed on the paper or canvass which is to receive the drawing. Combined with the perspectometer is an instrument termed a horizontonometer which the draughtsman places at a distance from his seat so as to embrace with his perspectometer the entire space within the frame, and thus fix the line of the horizon.

[Printed, 10*d*. Drawings.]

A.D. 1868, November 28.—Nº 3630.

GEDGE, William Edward.—(*A communication from Louis Hippolyte Lardit.*)—(*Provisional protection only.*)—" An improved plate-warming apparatus."

This improved apparatus is composed of a casing supported on feet, and portable by handles at the top. The lower part of this casing is fitted with one or more sliding pans or drawers provided with gratings or wire gauze for the reception of fuel of any kind, and above those fire boxes are two longitudinal cross pieces notched to receive the plates, one of the sides of the casing opening on hinges for their introduction, and also to expose the plates to heat from the ordinary fireplace if desired.

The plates being placed on edge, the caloric from the fuel strikes at once upon the entire surface of each plate, and as the casing closes tightly the heating of the apparatus is effected very rapidly.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 28.—Nº 3631.

ABEL, Charles Denton.—(*A communication from Thomas Schoenberger Blair.*)—" Improvements in the " manufacture of steel."

This invention consists in the employment of " pig bloom " or " pig scrap " produced as described in the Specification to Patent No. 3565 of 1868, for the manufacture of cast steel. For this purpose, in one process, pieces of " pig scrap " are placed in a crucible and treated in a similar manner to blistered steel or wrought iron, or the pig scrap or pig bloom is melted down in an open furnace, taking care to have such a relative proportion of cast iron as will allow of the mass being melted. Or the raw pig scrap or pig bloom broken up into small pieces is introduced into a bath of molten cast iron until the requisite degree of carbonization is attained. Or the pig bloom or pig scrap is previously heated to a white heat in a seperate furnace and then introduced into the bath.

[Printed, 6*d*. No Drawings.]

A.D. 1868, November 28.—N° 3632.

SAWARD, Josiah.—(*Provisional protection only.*)—" Improvements in the means of preserving natural " flowers and leaves of trees and plants for ornamental and useful purposes."

According to this invention the flowers or leaves are taken in a dry state and dipped or otherwise coated with a preservative solution in the form of an adhesive varnish of a rapidly drying nature, and not containing much water; a spirit varnish is to be preferred, or one in which volatile hydrocarbon forms the solvent, and a colorless varnish of bleached shellac and spirits of wine is very suitable for the purpose.

By this process the leaves or flowers are rendered impervious to moisture, and will be preserved or protected in their natural form.

In some cases, where the plant or flowers are to be kept under a glass shade, an ordinary adhesive solution may be used without the necessity of a waterproof solution.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 28.—N° 3633.

NORTON, James Lee.—" Improvements in dyeing and printing."

This Provisional Specification describes the use of the extract of hemlock bark in dyeing and printing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 28.—N° 3634.

HEATON, John. — " Improvements in the treatment of cast iron and in the apparatus employed " therein."

This invention relates to an improved method of constructing vessels or converters in which cast iron, when in a molten state, may advantageously be subjected to the action of nitrate of soda or of nitrate of potash, or of mixtures of the same, for the purpose of effecting the purification of the cast iron or the conversion of the same into steel, and consists,—

First. In the employment of a fixed converting vessel which is provided with a discharge opening at the lower portion thereof, such discharge opening being furnished with a removeable plug or stopper, or with a hinged or sliding door, in order that after the purification or conversion of the cast iron the contents of the converting vessel may be readily discharged without the necessity for removing or transporting any portion of the said vessel as has hitherto been the case. The closing plug or stopper or hinged or sliding door may be actuated by a screw lever or other well known mechanical contrivance in combination or not with a spiral catch for securing the said plug or door and enabling it to support the weight of the metal above it.

The upper portion of the converting apparatus may be so constructed as that the whole or a portion of the same may be moveable, or it may be so constructed as that access may be obtained to the interior of the fixed and lower portion of the converting vessel.

When cast iron is to be submitted to the action of nitrate of soda or of nitrate of potash or mixtures of the same, it is found desirable to prevent the molten metal when poured into the converter coming into immediate contact with the nitrate, and for that purpose I employ what I term diaphragms or separators; my invention further consists in the employment for such purpose of separators composed either of blast furnace slag or other fusible silicates, by preference cast into a form suitable for the converter employed and perforated with small holes, or of layer consisting of cast or wrought iron, or of such before mentioned fusible slag or fusible silicates in pieces or fragments, and placed in one or more layers intermediate between the nitrate and the cast iron, or upon the upper surface of the nitrate, or interspersed in such nitrate or mixture containing the nitrates, the object being to retard and regulate the action of the nitrate or of the mixture containing the nitrate, which is placed on the bottom of the converting vessel.

[Printed, 8*d*. Drawing.]

A.D. 1868, November 28.—N° 3635.

NAYLOR, William.—" Improvements in railway breaks and in apparatus connected therewith, part of " which improvements is applicable to the regulating the pressure of steam, air, gas, or water for various " useful purposes."

This invention relates, firstly, to continuous railway breaks, and consists in operating the break levers by gravity or by springs in conjunction with a rope or chain extending along the entire length of the train; or the weights and springs may be dispensed with, and the rope or chain alone employed for actuating the break levers. The slack rope or chain produced by the compression of the buffers or the crowding together of the vehicles is taken up by jointed arms or links and pulleys situate between each two vehicles. The said rope or chain is hauled upon by mechanism worked either by hand or by steam, air, or water power; and in order to equalise the force to be exerted in lifting the series of break levers in succession, a "fuzee" is employed, round which the rope or chain is wound.

When steam, air, or water power is employed for working the mechanism which hauls up the rope or chain, a peculiar pressure regulator is used for the purpose of reducing the pressure to the amount required. This pressure regulator is applicable in other cases where a regulation of pressure is a desideratum.

The second part of this invention relates to self-acting non-continuous breaks, and consists in actuating the break levers by a dead weight or springs in conjunction with the movement of the draw bars or in combination with a short chain connected to the coupling links and to the break lever, such chain being so much shorter than the coupling chain as the distance the break lever has to be lifted. When springs are used, whether in the continuous or non-continuous break for the purpose of exerting the force for applying the breaks, a system of jointed links is employed, producing a knee or toggle joint action, whereby considerable force is exerted upon the break levers when the breaks are to be applied. The break blocks in both systems of breaks are connected by thrusting rods to a bar or pair of links lying in its normal condition at an angle of about sixty degrees from the vertical, such inclined bar or pair of links being connected by other links with one or more arms on a way shaft to which the break lever is secured. By this means a knee or toggle joint action is also brought into play, operating directly upon the break blocks, the power exerted increasing as the angle of the inclined bar or pair of links is increased up to an angle of ninety degrees from the vertical.

The invention further relates to tender breaks which are worked by attaching the piston rod of a steam cylinder to the end of a lever of the first order, the other end of such lever being connected to the break lever by a bar or links and universal joints.

[Printed, 1*s.* 10*d.* Drawings.]

A.D. 1868, November 28.—N° 3636.

BROWN, George Stanley, and TURNER, Edward.—(*Provisional protection only.*)—" Improvements " in means or apparatus for communicating between the passengers, guard, and driver of a railway train, and " for signalling the speed at which a train is travelling."

For this purpose each carriage carries a cord or communicator which is capable of being fixed at each end to the ends of a similar communicator carried by the adjoining carriages, the last carriage at each end of a train having its communicator connected to signal apparatus carried by the engine or guard's van. This apparatus consists of a spring catch, which when in one position is capable of holding a lever carrying a bell or a hammer to strike a bell, and when operated by the cord or other communicator is released from the lever or hammer and thereby causes the bell to sound. The cord at each end of a train may be passed around rollers or attached to bell cranks connected to the signal apparatus.

The mode in which the communicator is operated is by means of a pulley to which the upper end of a cord or other communicator is fixed, whilst the lower end thereof carries a pulley over which the cord or communicator is passed, such cord or communicator being guided close to the before mentioned pulley by other pullies, one on each side thereof. Thus by operating a handle fixed to the winch or pulley the lever or hammer is released and the bell sounded at each end of the train.

A pulley is fixed in each compartment of a carriage, and an arm or semaphore projecting from the side of the carriage is raised (when a winch or pulley is turned) by means of a cam or other suitable apparatus carried thereby acting upon the inner end of a rod which at its outer end acts upon the semaphore arm; to raise it a ratchet wheel or teeth are fixed on the axis of the pulley with a spring catch or stop to act thereon, thereby preventing the handle of the pulley being turned in the wrong direction and serving to retain the parts in the position to which they have been pulled until the guard applies a key thereto. The signal apparatus is reset by placing the bell lever or hammer under the spring catch.

For signalling the speed at which a train is travelling a lamp is employed at the rear end of the guard's or other van, and it or a shade is caused to revolve by means of a worm or screw formed on or fixed to the axle of the hinder pair of wheels, such worm or screw driving suitable gearing connected to the lamp or its shade. Thus by the frequency of the flashes the speed of a train may be readily ascertained.

[Printed, 4*d.* No Drawings.]

A.D. 1868, November 30.—N° 3637.

SOPER, William.—" Improvements in breech-loading fire-arms."

The breech is closed by a block, which is hinged or pivotted at one side of the rear of the barrel, and which is raised and turned laterally on its pivot to open the breech. The said block is perforated centrally to receive the firing pin, which extends through the block with its ends in the proper position for receiving the blow of the cock or hammer and transmitting the same to the cartridge. The said cock is arranged in combination with a tumbler and lever in such a manner that the tumbler and lever always move together, while the cock, which is drawn back by the tumbler in cocking the piece, will remain in that position when the tumbler is moved in the opposite direction. The block is connected to the tumbler by a rod, and is thereby moved independently of the cock in closing the breech. The hammer is acted upon by an ordinary bent or V-shaped mainspring connected to the hammer by a swivel. The extractor is provided with a hook or claw, which is formed and arranged to catch under the rim of the cartridge in the charge chamber. The said extractor is attached to a bar which is fitted to slide longitudinally at the bottom of the breech chamber. This slide, through an intermediate lever, is connected with the hammer, and is operated thereby in the proper directions when the hammer is cocked and released. In drawing back the extractor the lever moves slowly at first to start the shell, and then with an accelerated motion to throw it from the breech. The trigger is arranged below the stock in the ordinary manner, and takes into notches which are preferably formed in the hammer itself instead of upon a separate tumbler. The firing pin is constructed with a valve, which prevents any escape of gas at the rear of the block. An auxiliary trigger is employed to prevent the accidental movement of the breech block and extractor. The parts of the lock are so arranged that by taking out one screw the whole of them may be removed without employing any tools or implements.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, November 30.—N° 3638.

PFEIFFER, Louis.—(*A communication from Auguste Schubeus.*)—" An improved fastening or lock for bags and other similar articles."

This invention consists of a casing (attached to one side of the frame of a bag) containing two metal slides (having angular ends in the centre of the casing, where they meet). These slides have holes formed in them (corresponding holes being made in the casing) to admit the hooks or catches when the sides of the framing (or opening part of the bag) are pressed together.

A knob or stud (which projects through the framing of the bag) being pressed on the angular ends of the slides, they are forced apart when the catches or hooks (the framing of the bag being pressed) pass through the holes in the slides, and the knob being released of the pressure the slides are pushed together by springs, thus securing the hooks and fastening the bag.

These springs are fitted on pins at the back of the slides, and are worked against pins fitted (at right angles to the former) in the casing.

Another casing is fitted outside the bag, having therein a bolt which on being pushed by a key under the knob or stud (when the bag is fastened) prevents it being unfastened.

[Printed, 8d. Drawing.]

A.D. 1868, November 30.—N° 3639.

FORBES, Joseph Samuel.—(*Provisional protection only.*)—" Improvements in the preparation of materials used in the manufacture of pottery, earthenware, and china, and in apparatus for the same."

In the preparation of " slop " the materials are reduced to the condition required by a dry process, and afterwards when necessary mixed with water.

The calcining process is conducted in a heating chamber with a furnace at the front end and a wall with an outlet for a chimney flue at the back, also with flues underneath and at the sides leading into the interior of the chamber, which is brought to a red heat. Also a drying room is connected with the chamber by flues.

The materials after being roughly crushed are passed through crushing rollers, and thence to grinding millstones, whence the pulverized material passes into a wash tub containing water, in which is a revolving fan. The mixture or " slop " is passed through sieves.

Glazes are prepared by means of crushing rollers and grinding stones, and the pulverized material is operated upon by a riddle or sieve with a revolving central shaft carrying a series of shelves, and afterwards by revolving brushes on a cone. The material is then operated upon by another pair of stones with a regulated quantity of water and brought to a liquid condition ready for use.

[Printed, 4d. No Drawings.]

GREEN, Richard Angell.—(*Provisional protection only.*)—" A new or improved meth
" articles of plate, jewellery, watch cases, studs, buttons, and other ornamental or useful o

The object of this invention is to ornament articles of jewellery, plate, watch-cases, st
other objects of utility or ornament, by the application of raised designs or devices, such
monograms, and figures produced in metal by the electrotype process, thus avoiding the n
a die or stamp, which, moreover, could not always be applied.

Thus a device engraved, embossed, or otherwise formed on a ring or other object may b
plastic material in a suitable form for the reproduction of a metallic raised copy in gold,
or other metals or alloys, and may be then applied and fixed to the desired object.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 30.—N° 3642.

CLARK, Alexander Melville.—(*A communication from Gaston Marcelin de Jea*
" improved material for the manufacture of tiles for roofing purposes."

I make tiles for roofing purposes of cast iron plates, preferably of about three fee
exceeding one-sixteenth of an inch in thickness.

These tiles or plates are made of the various forms now in use, and of more or less orna
I protect the surface from the effects of oxidation by painting, varnishing, or enamelling.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 30.—N° 3643.

GREIG, David, and FERNIE, John.—" Improvements in casting plough heads, w
" axles."

According to this Provisional Specification in casting plough heads, toothed and other
axles in steel metal moulds are used, and they are made with yielding or moveable parts i
to admit of the metal contracting freely in cooling.

Cranked axles are thus cast with the cranks at angles, and as soon as the mould is fill
are forced into the throws to displace the superfluous metal.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 30.—N° 3644.

WEST, Noel, and WEST, Robert Gibson.—" Improvements for the preservation
" rudder pins and gudgeons or braces, screw propeller shafts, the working parts of featheri
" and the surfaces of iron and steel ships and other structures."

This Provisional Specification refers especially to the protecting with zinc or other met
to iron surfaces of iron or steel liable to the double action of wear and corrosion in sea or
also refers to the preserving the iron or steel surfaces of ships and other structures by
other metal contained in metal cells.

of which the hat or covering is composed to the under side of the brim. And by preference connecting the upper and under side in the ordinary manner.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 30.—N° 3646.

MACLELLAN, WALTER.—" Improvements in fixing the rails of railways, and manufacturing hollow " metallic keys for so doing, and in the modes, means, and mechanism employed for these purposes."

This invention, under the first part, consists in tapering the edge of the lower of the two ends forming the slit of the hollow keys for securing rails to their railway chairs or sleepers, and also forming undulations along the front part of that angled edge, which in being driven in between the rail and the inner face of the outer jaw "takes over" a correspondingly formed projecting feather (either formed on the face of the jaw of the holding recess or made seperately, and held in position by "kneed" or "gib" heads at their ends), made wedge shaped on the under side, having a projection formed on its inner end, rounded to suit and enter the undulating hollows on the key in succession as it is driven in, so as to wedge open the slit and press down the lower side and corners of the key, which is thus forced or tightened down angularly against the web and lower corner or "flange" of the rail on which it bears, where it is also held tight by the projection, all in addition to the elastic tightening action of the usual form of hollow keys. These keys, so constructed, can be made much lighter, and therefore can be further improved by making them either out of hot or cold plates of steel, or a much better class of iron at little or no greater expense than they have been as heretofore constructed. And this improved wedge on the inside of the chair, with its holding projection, is also applicable for the retaining of wooden keys in their tightened position. The improvements under the second part of this invention consists in new mechanism for bending blank hot plates into hollow keys for fastening rails to their chairs and sleepers generally. The blank plates being first cut to suit the new form of hollow key described under the first part of this invention, or any other form required of hollow keys desired to be formed out of plates of metal. These blank plates regularly and equally heated, as removed from the furnace, are each placed on the bed plate of the machine close below the reciprocating mandril of a cross section similar to the inside of the keys to be formed, and either attached to or forming the front end of a reciprocatory spindle working in slide guides attached to the bed plate immediately behind the rest for the hot plate, which is placed centrally below the mandril, with its inner rectangular end close up to a guide, so that when the spindle and mandril comes forward a notch or square shoulder at the back end of the mandril carries forward the hot plate into the wide conical end of a matrix, which turns up the two ends of the plate gradually up the two edges of the mandril and down on the top side as it is forced through the front end, and steel drawing or shaping plate secured there; where at the extreme forward stroke a removing lever is hinged and kept up by the upper surface of the key being formed and pressed out, falls down behind it and holds it while the mandril is withdrawn by the back stroke of the spindle, which leaves the finished hollow key to drop down in front of the shaping matrix.

When the keys are to be tapered (instead of parallel) the hot plate, after it is turned over the mandril is forced into a strong smooth tapered matrix the length of the key, with the small end in front, so that the compressed key can be easily withdrawn from it along with the back motion of the mandril or after its removal; in either case the key can be removed from or dropped through the centre of the bed plate behind the conical end of the matrix instead of in front, as in the former modification.

[Printed, 1*s*. 6*d*. Drawings.]

A.D. 1868, November 30.—N° 3647.

REID, JOHN WYATT.—(*Provisional protection only.*)—" Improvements in bleaching vegetable fibre."

The novelty of this invention consists in applying the solution of chloride of lime to the vegetable fibre in an air-tight vessel at a temperature of from 120 to 180 deg. Fahrenheit.

[Printed, 4*d*. No Drawings.]

A.D. 1868, November 30.—N° 3648.

NEWTON, WILLIAM EDWARD.—(*A communication from Richard Kitson.*)—" Improvements in machines " for opening and cleaning cotton or other fibrous substances."

Forming the communication between the seed chamber and throat so as to allow the air to pass from the seed chamber to the dust trunks giving vent to the seed chamber and preventing the seed being sucked back again with the cotton.

[Printed, 10*d*. Drawing.]

A.D. 1868, November 30.—N° 3649.

NEWTON, Alfred Vincent. — (*A communication from Freeman Knowlton Sibley and Levi Clifford Wade.*)—“ Improvements in apparatus for receiving and delivering mail bags and packages on railways.”

The object of this invention is automatically to receive and deliver in an efficient and safe manner mail bags and packages on railways into and from a carriage or carriages while in motion. To this end a scoop is arranged to swing on a vertical axis within or through an opening made in the side of the carriage so that when set to a working position it stands obliquely to the side thereof and operates in connection with suitable devices for suspending the bags or packages to be received and delivered in such manner that the receiving of the one bag or package by the interior of the scoop catching and guiding it into the carriage is or may be made to effect the delivery of another bag or package from the carriages.

[Printed, 8*d.* Drawing.]

A.D. 1868, November 30.—N° 3650.

RANSOME, Allen.—“ An improvement in the construction of circular saw benches.”

An arrangement of clutch gearing is provided for imparting the axial motion to the transverse vertical drum used for winding up the rope or chain that transmits the feed motion to the wood under treatment.

[Printed, 10*d.* Drawing.]

A.D. 1868, November 30.—N° 3651.

JOHNSON, John Henry.—(*A communication from David Blake.*)—(*Provisional protection only.*)—“ Producing imitations of and substitutes for wood, ivory, stone, and other hard substances.”

This invention relates to the production of imitations of or substitutes for wood, ivory, stone, and other hard substances, and consists in grinding to a fine flock any dry fibrous material, to which flock gum shellac, or other fusible adhesive material reduced to a fine dust or powder is to be thoroughly mixed in the proportions of about equal parts by weight of each when the greatest strength is required, but these proportions may be varied for different articles, and they may be supplemented by white lead or other substance, so as to increase or reduce the specific gravity, or by various pigments for the purpose of coloring. A sufficient quantity of the compound or mixture for the required article is placed in a mould, the temperature of which is sufficiently elevated to fuse the gum, whereupon the said compound is subjected to pressure whilst in the mould, which pressure is maintained till the article is cold. By the above means an article may be produced having the weight, elasticity, hardness, and durability of ivory, and by changing the proportions the qualities of wood, stone, and other materials may be obtained. In order to give the appearance of ivory as well as its other qualities collodion, in a thick solution may be employed, added to which is a white pigment to give it whiteness, by dipping the article in this solution and repeating the process the desired thickness of coating is obtained. When making billiard balls, with a view to get the best results with the least labor, the dipping may be repeated before the previous coating is fully dry.

In some cases, in order to prevent the too rapid evaporation of the collodion, the article may be enclosed in such a manner as to prevent free circulation of air about it. With a view to imparting the appearance of ivory to articles made from other substances, such as wood or metal, they may be simply subjected to the dipping process above referred to. By covering the article with glue, linseed oil, or some resinous gum, the collodion adheres better, and by mixing with the collodion a drying oil it dries more slowly and is softer, tougher, and more adhesive. When required for covering a concave surface this is important, as the collodion alone, by its rapid evaporation, had a tendency to pull itself loose from such surfaces.

[Printed, 4*d.* No Drawings.]

A.D. 1868 December 1.—N° 3652.

BONNEVILLE, Henri Adrien.—(*A communication from Jean Baptiste Abel Duchesne.*)—“ Improvements in the manufacture of mineral teeth, and in the method of fixing such mineral teeth to the dental piece.”

This invention relates to a new and improved manner of fixing mineral teeth to the dental piece by means of a piece of rubber or other plastic material which is so arranged and the tooth so treated that the tooth and the dental piece form as it were a single and compact whole.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 1.—N° 3653.

BETTS, William.—“ Improvements in the manufacture of capsules for bottles, jars, and similar vessels, and in apparatus employed therein.”

Manufacturing capsules with letters, trade mark, or other designs or ornamental devices embossed upon the sides, such capsules, constituting a new manufacture in themselves. The lateral embossing of capsules may be effected either by revolving dies in a species of lathe or by split expanding dies or mandrills in combination with a cup, into which the capsule is inserted, the surface of the mandrill or the interior of the cup having the required letters or design engraved thereon, either in relief or intaglio. In some cases the cup may be divided longitudinally in two or more parts, so as to open and close, and an india rubber or other covering may be applied to one or other of the surfaces between which the metal of the capsule is compressed to form a yielding bed or elastic surface to receive the pressure. Or a solid mandrill of india rubber may be used which expands laterally when subjected to end pressure and forces the metal of the capsule against the interior of the cup.

According to another arrangement the capsale may be fitted on a revolving mandrill and rolled over a flat engraved surface with the requisite degree of pressure.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 1.—N° 3654.

BROOKES, William.—(*A communication from William Hall and George Hall.*)—(*Provisional protection only.*)—" Improvements in means employed in the manufacture of fabric in lace machinery."

The improvements relate to the manufacture of lace fabric with fine muslin portions therein as compared with the size of the holes or meshes of the net by taking out every other stump from its bar, together with half of the warp threads, whilst all the bobbins are at work full guage.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 1.—N° 3655.

SHILLCOCK, Joseph Bradley.—(*Provisional protection only.*)—" Improvements in securing the contents " of bottles, jars, and other similar vessels."

The novelty in this case consists in fitting the necks of bottles, jars, and other similar vessels with a band or binder which turns up and down, and when up passes over the cork, stopper, or cover, and thus secures the same in position.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 1.—N° 3656.

DANIELL, Samuel Allen.—(*A communication from John Farmerley Dickson.*)—(*Provisional protection only.*)—" Improvements in machinery or apparatus for cleaning bottles and other vessels."

This invention consists essentially of a horizontal axis carrying a circular disk to which a series of supports are fixed, the supports being inclined to the axis of the disk after the manner of the threads of a quick threaded screw.

Each support has a shallow conical cup at bottom and near the top end a sliding bracket carrying a tube. In this tube is a rod having a conical plug or cork at bottom. The rod is pressed down by a coiled spring.

The bottles to be cleaned having been charged with water and shot are placed in the conical cups of the supports, and are fixed therein by the conical plugs or corks of the spring rods described being made to press upon the mouths of the bottles.

By giving a rotatory motion to the disk the cleaning material placed in the bottles is made to move round the inside of the bottles as well as to travel from end to end of the bottles, and thereby effectually to clean the said bottles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 1.—N° 3657.

PRICE, Edward.—(*Provisional protection only.*)—" A new or improved combined shirt front and " collar."

According to this invention a closed shirt-front, either plain or pleted, and capable of being worn with or without studs, is made; the neck band is continued from the neck piece completely round the back of the neck to the front, so as to form the neck band of the collar also, which is attached in the ordinary manner thereto, and the band is buttoned to the opposite side of the shirt front, and lastly to a stud or button in the centre of the front.

By this combination the front is caused to set smoothly on the chest, and to be free from creases.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 1.—N° 3658.

JOHNSON, John Henry.—(*A communication from Jean Alexandre Edmond Pasquier.*)—"Improvements "in carding engines."

This invention relates to carding engines employed in spinning carded wool, and consists in substituting for the annular intervals or spaces formed by bands of leather which are interposed between the rings of card on the doffing cylinder thin metal blades having knife edges and secured parallel to each other and side by side in a metal frame which is fixed to the main frame of the carding engine. These thin blades are disposed nearly vertically in front of the doffing cylinder, and are caused to enter the cards to a depth of about $\frac{1}{16}$ of an inch, the length of blade in actual contact with the circumference of the doffer being about two inches. The length of the "doffer" is thus subdivided into as many spaces as may be required without the great loss of working space attendant upon the old system. The doffing comb may be made in two portions, an upper and a lower one; the latter works between the fixed separating blades above referred to, and removes one half the wool, whilst the former takes off what remains after the action of the first.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 1.—N° 3659.

FULLER, Henry William, and BARNUM, Isaac Williams.—"Improvements in tuck markers "for sewing machines."

The fabric lies on a plate against which the creasing device is thrust. Such device consists of a notch and point, or a pair of nipping jaws to pinch the fabric between them, such devices are carried by a vibrating lever with or without the interposition of a spring. The thrust plate is inclined to enhance the nipping action, and also forms a tongue to cover the edge of a previous tuck. The cloth is smoothed and made to follow the gauge by a smoother, and is clamped at the moment of being creased and then released to be advanced for the next nip or thrust. The instrument is fastened to the machine by means of a thumb screw and base plate; the latter in one modification controls the tuck and permits adjustment of the tucker. The tucker is so set for a given width of tuck that it may be removed from the machine and replaced without altering the "set." A scale of divisions facilitates the measurement of the tucks and a loop on the interposed spring arm or on the lever ties it to the needle of the machine.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 1.—N° 3660.

GRINDROD, Jonathan.—"Improvements in the construction of screw ships or vessels, and in propellers for the same, parts of which improvements are also applicable to paddle vessels."

My improvements consist in taking away or opening out as much of the dead surface aft as will allow the water to escape instead of impinging against it, thereby ensuring a quick turning of the vessel and a quick helm, and I prefer that there shall be little or no "gripe" forward.

In adapting the body of a vessel to such improvements, the framing, rudder, and screw posts are all connected both to the main keel and to what I term a "curved" or "upper" keel, and all or any of such arrangements may be varied according to the adaptation and employment of either double or single screws, or the form or shape of the vessel.

If a single screw is used the rudder can be hung abaft the screw in the usual way (for ordinary steering) and another rudder on the throttle valve principle forward of the screw, both of which may be used either at the same time (for very quick turning) or separately.

If a double screw is used a T V rudder, or one hung in the usual way, or two rudders may be used as above described.

Two screws may also be used, fitted or keyed on the same shaft, their united action being considerably more powerful than a single screw. The further apart they are placed the better, and if by any accident, collision or otherwise, one of them is lost, there is the advantage of having the other left in working order.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, December 2.—N° 3661.

ROSTAING, Charles Sylvester.—(*Provisional protection only.*)—"Improvements in electric telegraph "cables."

This invention consists essentially in winding the conducting wires of electric telegraph cables spirally around a more or less elastic core. These spirally enrolled wires are then covered with bands of india-rubber or other elastic material also wound spirally, but each alternate layer being wound in opposite direction to the preceding one. The result of this construction is that if a powerful strain be brought upon the cable, or it happen or require to be bent even at right angles, the conducting wires do not stretch, become attenuated, harden or break as in ordinary cables, but a simple opening of the spirals takes place, and immediately the strain is relieved the elastic core and outer elastic coverings contract, and in contracting bring the spirals back again towards each other.

Where a considerable body of conducting metal is required, several wires are twisted together like thread or cord before being wound spirally on the core, which may also carry more than one conducting wire.

The conducting wire on the elastic core having been covered with an elastic band of isolating material, a second conducting wire is sometimes wound spirally over this band, running in the space between the spirals on the core and completely isolated therefrom, and thus messages may be transmitted by each wire at the same time in opposite directions.

The invention also relates to various coatings of insulating material for the conducting wires, and of protecting outer coatings for submarihe, subterranean, and ærial telegraph cables.

Cables constructed on this spiral system are especially recommended for military purposes, as they may be simply laid on the ground, not in it, and will resist the most violent traction, compression, and bending.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 2.—Nº 3662.

ELLIS, Peter.—"Improvements in letter boxes and bags for receiving letters."

A letter box so arranged that the letters deposited therein are absolutely safe from all external attempts at abstraction, and a letter bag intended to be attached at the base of the box, so arranged that on the removal from the box the opening is closed and the access to the letters by the shutter in the face only the key of which is in the possession of the owner. The first part of the arrangement is appropriate to residences and chambers, the whole for post office collecting pillars, and for those who object to their correspondence passing into the hands of their servants, but receive the bag and open for themselves.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 2.—Nº 3663.

ELLIS, Peter.—"An improved public conveyance or omnibus, parts of which invention are applicable "to other carriages."

A carriage of equal or greater than usual width for internal accommodation, but occupying less width of the public roads, the interior floor to be but about eight or nine inches above the road, the roof to be easily, safely, and decorously accessible, and well guarded, and with means of rapid covering in the event of inclement weather or rain, with precise, certain, and commodious means of recording the number of persons or passengers using the same, and with a sure system of break for preventing undue acceleration on declining roads, and the whole from the character of the construction stronger, safer, easier of traction, and from a better system of ventilation more agreeable of use.

[Printed, 1*s*. Drawing.]

A.D. 1868, December 2.—Nº 3664.

TIDMARSH, John.—"Improvements in apparatus for clipping or shearing horses and other animals."

This invention consists in the employment of combs, segmental in shape, with the teeth thereof close together, and not radiating from one common centre, in combination with a plate (to which a to and fro motion is imparted), also segmental in shape, and carrying cutting blades or teeth, by preference three, but which do not radiate from a common centre.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 2.—Nº 3665.

WARBURTON, Thomas, the younger.—(*Provisional protection only*.)—"Improvements in piecing "cardings of cotton or wool as delivered from the carding engine."

My invention consists in a method of piecing the cardings whereby the occurrence of hard places at the points of piecing is prevented. The cardings, instead of being pieced singly, as hitherto practised, are pieced double or in pairs (or in groups of three or more), and in such a way that the piecings of each pair of cardings break joint, and that only the soft ends of the cardings overlap for about an inch. This I effect principally by driving the brat at half its usual speed, so that when one set of cardings has advanced about half its length a second set is delivered from the buckets, and when the first set has advanced almost its full length a third set is delivered with its ends overlapping the first set about an inch, and the second set about half way, and so on.

When the cardings thus placed pass under the rubber each pair (or group of three or more, as the case may be) is rolled into one, and as the piecings of each carding are made with the soft ends, and each piecing comes opposite the centre of or breaks joint with the other carding, the joints are all firm and there are no hard places.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 2.—N° 3666.

HELY, Edward.—" Improvements in machinery for the manufacture of envelopes."

This invention relates to a simple and effective combination or arrangement of machinery or apparatus for making envelopes, and consists in arranging the various parts so that they may be made to perform their various functions without the necessity for a continuous driving motion, being worked by a foot lever or treadle. This treadle first brings into motion a hammer, causing it to turn over on a pivot or centre, and to emboss the design on the seal flap of the blank by the aid of a die under the hammer face. By this motion of the hammer two appliances are brought down for the purpose of pressing the requisite parts of the blank againt gum or cement, after which they, in company with the hammer, are moved back again to their original position, and a plunger of the size of the envelope descends upon the blank and forces it down into a box or cavity, leaving the four flaps of the envelope erect. A further descent of the plunger forces the box still further downwards. To the edges of this descending box are hinged or fastened four folding flappers, which are forced inwards by contact with the outer edges of the opening in the metal table, through which the box descends and causes the folding flappers to turn down the erect flaps round the plunger, which completes the manufacture of the envelope. As the plunger ascends again it encounters two fingers or rods which pass through it and remove the envelope just made, the motions being repeated as hereinbefore described for the next envelope, and so on. If desired the machine may be made to leave a thickened edge on the envelope of any desired width.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, December 2.—N° 3667.

ALEXANDER, John, and HILL, James.—" Improvements in the means of and apparatus for signalling " on railways."

According to this invention the wheels of the engine or train are made the cause of motive power by their passage over curvilinear bars set in bearings close to the side of the rail, free of the centre portion of the tyres, but capable of contact either with the flanges or edges of the tyres; by these means the curvilinear bars which are raised above the level of the rails become depressed to such level, and by their lever action communicated to shafts and vertical bars operate the wires, ropes, or chains in communication with the signal posts, and also the connecting wires from one signal post to another.

Various arrangements of signals may thus be worked, and a check or warning be given to other trains. The wire, ropes, or other long connections supported on rollers set in pillars along the line, are united in various places by the intervention of helical steel springs, in order to compensate for expansion and contraction caused by change of temperature or other causes.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 2.—N° 3668.

MAYNARD, Henry Nathan.—" Improvements in girders for bridges, viaducts, piers, jetties, and " buildings and other structures."

This invention consists in constructing lattice girders with the upper or compression part formed of short lengths of tubes fixed together end to end, with a plate intervening for securing the other parts of the girder thereto, while the lower or compression part is formed of metal ropes or strands, or of bundles of hoop iron.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, December 2.—N° 3669.

LISTER, Samuel Cunliffe.—" Improvements in weaving velvets and other piled fabrics."

This Provisional Specification describes improvements in producing piled fabrics by weaving two cloths face to face, and then cutting the pile between the cloths. The pile loops are tied in with one shoot of weft or in some cases with two shoots of weft.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 2.—Nº 3670.

PALLANT, Samuel.—"Improvements in fastenings applicable to stays, gaiters, and other articles of "dress."

This Provisional Specification describes fixing stiffeners of steel or other suitable material on to the two edges to be fastened. One stiffener has studs or similar instruments upon it, and the other has hooks or fastenings upon it. One or both of these stiffeners is jointed opposite each of the fasteners. Longitudinal movement of the stiffeners is prevented by a fastening at their ends.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 2.—Nº 3671.

HUBBELL, Theodore Byron.—(*A communication from Augustus Hubbell.*)—(*Provisional protection only.*) —"An improved reflector for oil and other lamps and burners."

A metal shield or reflector made bright on its under side and pierced at the centre to allow of the flame of the lamp passing up through it is fitted to the argand or other burner, and by means of a pinion in gear with a rack connected with the reflector it is made capable of vertical adjustment relatively to the lamp flame.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 2.—Nº 3672.

HOOKER, Peter.—"Improvements in brick-making machinery."

I employ an ordinary punching press to mould and press the bricks, and my invention consists in providing a slide working in guides, and operated either by a hand lever or by a shaft and gearing worked by the machine, by means of which the mould is moved from under the plunger after it has compressed a brick therein. It further consists in removing said brick from the mould by bringing the latter over an aperture in the table of the machine by means of said slide, and under clamps which serve to keep said mould down on the table during the removal of the brick therefrom. The brick is then raised out of the mould by a vertical slide or follower operated by a shaft driven by the machine and suitably connected to said follower, which is moved up through the mould, raising the compressed brick completely out of the same.

The brick is removed from the follower on to a platform by a rocking lever, the lower end of which works in a cam groove formed on a shaft operated by the first shaft, the action of said cam groove on the lower extremity of said lever bringing forward its upper end at the proper moment to transfer the brick from the follower to the platform above mentioned.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, December 2.—Nº 3673.

CLARK, Alexander Melville.—(*A communication from Alexandre Treanaunay.*)—"Improvements in "paving blocks or slabs of wood, and in the means of fixing the same."

The paving blocks or slabs I make of red pine or beech, elm, or birch wood, cut across the grain at an angle of 45 degrees. The blocks are laid in a bed of concrete composed of ingredients and in the proportions specified, a space being left all round the blocks for the introduction of an adhesive mastic, also prepared in the manner described.

The blocks or slabs are previously prepared by placing them in an iron vessel containing a mineralizing composition consisting of resin, boiled oil, wood tar, napthaline, and plumbago in suitable proportions.

The blocks are also coated with an improved waterproof composition at their lower part.

The blocks for paving roads are from 6 to 9 inches square by 6½ inches deep (about). The slabs for footways and interiors are about 5 inches square and about three in thickness, combined together in fours or other number and united by a hard glue of this invention, the composition of which is given.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, December 2.—Nº 3674.

TAUNTON, Edmund William Pyle.—(*A communication from Thomas Sampson.*)—(*Provisional protection only.*)—"Improvements in or additions to chairs."

This invention consists in applying a spring to each of the front legs of chairs for the purpose of enabling the chairs to take a motion similar to that of ordinary rocking chairs. It is preferred to use springs made of a spiral coil of steel or iron wire, provided at top with a metallic cup or socket or plate, to which the leg is secured by screwing or otherwise, but the form of the springs may be varied.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 3.—Nº 3675.

DORRITY, Daniel.—“Improvements in mechanical means for locking printers' forms, as w
“for mounting or fitting pieces on the beds or tables of planing machines, and for other co
“purposes.”

Substituting for the furniture and other means of locking printers' forms at present in use, a pe
kind of metal frame with movable exterior plates, to which a rectilineal motion is given, perpendicu
the side of the form upon which the apparatus is caused to act; and supplanting the laboriou
inconvenient *manual* process of fastening or loosening furniture by the simple *mechanical* operati
turning a key or a handle fitting into a pinion.

[Printed, 10*d*. Drawings.]

A.D. 1868, December 3.—Nº 3676.

MARECHAL, Louis Jules.—“Improvements in locks.”

In lieu of the ordinary key I use a special key or stock with bits or teeth of different length accordi
the interior combinations of the lock, so as to permit of the movement of the bolt or bolt and latch.
action of the teeth or bits places upon an equal line a series of slots cut in so many moveable bla
proportion to the numbers and lengths of the different bits or teeth so as to permit of a free passage
these slots of a comb fastened on to the bolt, which comb in any other position of the blades is immov

The action of the key by pressure and not by rotation.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 3.—Nº 3677.

GRYLLS, Henry William.—(*Provisional protection only.*)—“Improved apparatus for obtainin
“applying motive power.”

This invention consists in a peculiar arrangement, in a suitable frame, of springs, shafts, wheels
levers, for obtaining and applying motive power for the propulsion of ordinary land, railway, and tra
carriages, for ships and vessels, for sea or river navigation, balloons and other aërial machines, a
driving machinery.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 3.—Nº 3678.

PUGH, William, and FIELD, James.—(*Provisional protection only.*)—“Improvements in the
“struction of cataract and other lenses for defective visions.”

This invention consists in the employment of two glasses, or pebbles, one placed on the other, and sec
together, in place of one heavy piece, or lump of glass, or pebble, as heretofore.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 3.—Nº 3679.

GEDGE, William Edward.—(*A communication from Jean Pierre Lattes and Raymond François Four*
(*Provisional protection only.*)—“Improvements in the construction of ploughs.”

This invention consists in certain modifications of the share and shifting mould-board, and in the applica
to the beam and fixed supports or body of a socket piece and of a share forming a Grecian plough, als
the substitution, at pleasure, of a small share serving as a grubber.

The mould-board turns on a pivot on the share, and is held in position by a rod and hook taking
catches placed in various positions.

To transform the plough from a turn-board plough into a Grecian one a rod is unscrewed, the mo
board and share removed, and another share is secured in the socket piece by a pin and twin wings f
thereto by a brace and bolt. For grubbing, this share and wings are removed and a grubbing share inse
in the socket-piece.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 3.—Nº 3680.

BANKS, John Henry.—(*Provisional protection only.*)—“An improved method of constructing buildin
“such as mission churches, chapels, schools, or any other buildings where economy of cost is an object,
“for an improved method of heating and ventilating the same.”

By the use of iron buttress standards placed at defined distances apart, which standards have fla
formed upon them, so arranged that the spaces between one standard and another can be filled in with bri
rubbish, &c., and further, that upon the upper extremity of the standards a shoe is formed to receive th
end of roof principils, one side of which shoe is formed by a separate plate, which manner of constructi
allows the woodwork to be bolted firmly up. The standard is provided with a projecting hook to recei

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brackets for supporting spouts, and with a slot to receive the wall plate, which wall [*plate**] is used to tie the standards laterally to each other as well as to receive the spars and form a transome to the window if desired. The bottom part of the standard is shaped as a bed plate, which may be bolted down to a sill of wood, iron, &c. if necessary, and is further provided with a vertical flange, to which flange are bolted joists that are sufficiently long to go across the building to be attached to the standards on the opposite side; I use iron back plates, which enables me to attach the purlines to the principils, which renders their positions to each other rigid and perfectly secure, and also one side of the ridge box to principils of roof I also form of a separate plate.

The manner of heating.—I construct an ordinary cockle stove which is built in the outer wall sufficiently below the floor line to prevent accident by fire, from which stove an ordinary flue is built, which flue may run along the centre, side, or whatever direction may be thought desirable, for a length of say 12 feet from the stove; the flue is arched in and cut off from the other part by a cross wall forming a chamber, which I call the flame box. In the said cross wall is built a piece of ordinary round or square iron piping, as the case may be, from which pieces of piping are laid continuous lengths of lengths of similar piping, that are made thoroughly smoke tight by means of flanged end joints or by socket joints having a vulcanized india rubber band round them, or by cement, the nature of which will be hereafter described; the flue will be furnished with a cast iron curb to receive the air grid and terminate in a chimney in the ordinary manner.

The manner I propose of ventilation is as follows :—By fixing small exhaust fans in the roof, which will be turned by the action of the wind in a manner as will be hereafter described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 3.—N° 3681.

LITTLER, John, and BANKS, John Henry.—"An improved method of constructing furnaces whereby "more perfect combustion takes place, and the smoke from the fuel is more thoroughly consumed."

The novelty of this invention consists in forming a transverse division and also flues in furnaces, the object being a saving of fuel and an entire consumption of the smoke.

[Printed, 1*s*. Drawings.]

A.D. 1868, December 3.—N° 3682.

CHADBURN, Charles Henry.—"An improved instrument for sketching and drawing."

This improved instrument enables even an inexperienced person to draw or sketch landscapes or any visible object with great facility direct from the objects themselves, and consists of a pair of cross levers or beams working on a common fixed axle, about the centre of their length, and [*connected*†] together at each end by a pair of links or connecting rods, one of the links on the upper end of the instrument is formed with a sight hole, or fitted with gimbol rings to receive the object end of a telescope. The axle upon which the cross levers work is formed with a clamp and screw or other suitable mechanical arrangement for attaching the instrument to the upper part of a drawing board or its equivalent carrying the paper or other sheet intended to receive the drawing. From the axle upon which the cross levers work springs an horizontal arm, the end of which carries a small vertical standard at a right angle thereto, and is fitted at the top with a sight hole or with a small forked crutch turning on its vertical axis and supporting the eye end of the telescope on a pair of pivots. When the sight holes are used they are fitted with cross hair or "hair and bead," or other sights. The horizontal arm and the small vertical standard on the end thereof are both capable of elongation and contraction, the first regulate the size of the drawing, and the latter to adjust the sight. The pencil or other tracer is fitted to one of the links on the bottom of the cross levers, and is in contact with the surface to receive the drawing.

The instrument being attached to the drawing board or its equivalent is then to be placed in an upright position and supported upon any convenient stand. The operator by applying the eye to the sight on the vertical standard and looking through the sight of the upper link rod, which is above the upper edge of the board, on to the object to be delineated and then guiding by hand the cross hair or bead of the sight so as to cause it to follow the outline and so forth of the object to be sketched, which movements are noted on the surface placed to receive the same. In place of the cross levers and link pieces described an ordinary pentagraph may be used, if fitted with sights or telescope, as hereinbefore described, but it is much preferred to use the cross lever arrangement, as instruments so constructed are more convenient to operate.

[Printed, 1*s*. Drawings.]

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* The word "plate" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

† The word "connected" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

In roundabout delivery machines the pole has a shaft fixed to it and carries a seat for t
roundabout is driven by a worm on the axis of the first motion pinion.

In mowing machines the cutting apparatus is arranged behind the carrying wheel, and a dr
is connected with the arm which carries it to keep it down.

[Printed, 3*s.* 4*d.* Drawings.]

A.D. 1868, December 3.—N° 3684.

KINSEY, Henry.—"Improvements in steam and other boilers."

This Provisional Specification describes various modes of forming boilers from corru
metal.

[Printed, 1*s.* Drawings.]

A.D. 1868, December 3.—N° 3685.

SIMPSON, William, and HUTTON, John.—(*Provisional protection only.*)—"Improve
"cating apparatus and the application of the same to machinery."

This invention relates to the class of lubricators in which oil is caused by the motion of th
be lubricated to flow from a reservoir down a tube in which a small rod is loosely fitted
invention consists in the improvements herein-after described, whereby the said lubricato
capable of application not only to shafts but also to rubbing surfaces in general, such as gu
bars.

A conical head or valve is formed on the inner end of the rod referred to, which valve, whe
is not in action, fits against a correspondingly formed valve formed in the inner end of th
which the valve, spindle, or rod passes. The guide block or other moving surface to be
inclined grooves formed in it, which grooves act on the outer end of the aforesaid spindle
the valve and allow a small quantity of oil to pass down the tube. The valve is closed ei
gravity or by a spring.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 4.—N° 3686.

LAKE, William Robert.—(*A communication from John Gilbert Avery and Samuel V.*
"provements in knitting machines."

My invention relates to a machine in which the knitting is accomplished by the action of a
(projecting from the periphery of a rotating disc or wheel) and a reciprocating needle in com
looper which takes the thread from the needle to form the stitches upon the teeth and a
removes the stitches as they are formed. The rotating plate or wheel which carries the sc
fitted to turn on a stud or pin which is fixed in the centre of a ring forming a part of th
machine. The said frame is extended on one side of this ring, and is provided with a bracket
screw, whereby it may be conveniently secured upon a table or other support. The disc or
in connection with a toothed pinion which is caused to act with an intermittent motion like a
by means of a rod attached to an eccentric which is carried on the main spindle. The
actuated by means of a handle or crank arm at the side of the machine or by other conveni

Knives are arranged with their cutting edges over these slots, which knives cut the roots into slices as the cylinder rotates under the hopper. Other knives are arranged to divide these slices into strips which pass through the curved slots in the cylinder into contact with a third series of knives, whereby they are cut into small square pieces. The said pieces are conducted away from the machine by a suitable discharging spout.

[Printed, 6*d.* Drawing.]

A.D. 1868, December 4.—N° 3688.

ROBINSON, Henry.—" Improvements in dressing millstones and in apparatus therefor."

This invention consists in forming the cracks on the surface of the stone wider apart or coarser near the periphery than near the centre by means of a screw having a variable pitch, so that the wear on the surface of the stone will be equal in all parts.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 4.—N° 3689.

HIRSCH, Simon.—(*A communication from Longin Gantert.*)—" Improvements in dyeing yarns in hanks or " skeins, and in the mechanism or apparatus employed therefor."

The feature of novelty which constitutes this invention is the arrangement of a hollow central shaft on which is fixed a disc having rectangular frames on both of its sides; on these rectangular frames the yarn is hung, and the whole revolving within a " boiler " containing the dye liquor.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 4.—N° 3690.

CHARLES, Robert.—(*Provisional protection only.*)—" Certain improvements in thimbles."

The novelty of this invention consists in the application of an internal lining of glass to thimbles.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 4.—N° 3691.

JOHNSON, John Henry.—(*A communication from Maurice Howell Utley.*)—" A new mode of and " apparatus for treating diseases."

The treatment of diseases by the application of vacuum combined or not with electric currents and medicated vapours. The patient is placed in a vacuum receiver provided with an opening for the passage of the neck, so as to leave the breathing perfectly free. Auxiliary receivers or vacuum cups are also employed to be used with or without the main vacuum receiver. Electric wires are provided for conveying currents of electricity to any part of the system when required, and tubes for the admission of medicated vapour to be applied in partial vacuo are furnished. Air pumps connected by flexible tubes with the main receivers or with the different vacuum cups or auxiliary receivers serve to produce the desired amount of vacuum.

[Printed, 1*s.* Drawing.]

A.D. 1868, December 4.—N° 3692.

ROLLINS, John Gustavus.—(*A communication from Henry Page.*)—" Improvements in nozzles for oil " cans and other vessels."

For this purpose the nozzle is formed by preference of thin metal spun up into a screw, a screw cap made in a somewhat similar manner being applied thereto, but instead of leaving the bottom of the nozzle open to the can or other vessel a piece of thin metal or other suitable material is fixed therein which may be readily removed by a knife or other suitable means when it is desired to pour out the contents of the vessel.

By these means the can or other vessel is hermetically sealed for transport, whilst when the bottom of the nozzle is removed the cap or cover forms a sufficiently secure protection to the contents thereof.

[Printed, 6*d.* Drawing.]

A.D. 1868, December 4.—N° 3693.

AINSLIE, William George.—" Improvements in means for drying peat, peat compounds, and other " materials."

For this purpose peat or other materials to be dried are placed on open trays or shelves, leaving spaces all round for the passage of air, as is now commonly practised.

These trays or shelves are carried by waggons or " lurries " provided with cranked axles, so as to facilitate the use of large or comparatively large wheels, and thereby render the traction more easy and at the same are supported on rails, motion being given thereto by means of a chain or rope passing pullies at each end of the shed and connected at each end to the waggons at the ends of the giving motion to one of the drums or pullies the waggons or "lurries" are moved forwar other suitable means may be employed for this purpose.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 4.—N° 3694.

BOULTON, Matthew Piers Watt, and IMRAY, John.—"Improvements in rotary p "and fans."

Rotary apparatus for the propulsion of vessels, consisting of a wheel revolving between constructed that the stream passes through the instrument without shock and with unif that its direction can be reversed by reversing the rotation of the wheel.

Other forms of propellers resembling those first described and constructed to attain the s

Application of these constructions to pumps and fans.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 4.—N° 3695.

MARSDEN, Henry Louis Delabene.—(*Provisional protection only.*)—"Improvements "apparatus for toning, fixing, and washing photographic prints, which improvements are "rocking machinery or apparatus for other purposes."

This invention consists of one or more receptacles for containing water or toning, fixing, c in which the article to be prepared are immersed, which receive a rocking motion from the axle provided with projections, cranks, or eccentrics.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 4.—N° 3696.

CAPELLE, Josse Séraphin.—"Improvements in calendars and in their application to d "and other articles of furniture."

This invention consists in placing four cylinders one above the other and each gearin worked by a knob on the exterior of the apparatus.

One cylinder has inscribed upon it the twelve months of the year, each successive month b view by turning the knob of its pinion monthly; another cylinder carries the days of the moved daily, as is also a third, which carries the days of the week; the fourth cylinder giv only requires regulating at the beginning of each succeeding year.

This arrangement is applied to secretaries, desks, clocks, consoles, and various articles of f

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, December 4.—N° 3697.

Treating and purifying paraffine in the condition of loose crystals by the aid of centrifugal apparatus and washing with naphtha.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 4.—N° 3699.

SWANN, John Russell.—" Improvements in kilns for calcining limestone."

This Provisional Specification describes applying moveable or travelling fire bars to kilns. The heat from the fire upon these fire bars rises up in the kilns through a dry limestone arch. The fire bars can be drawn out of the kiln whilst it is cooling and put into another kiln.

The kilns may be arranged one higher than another, and the heated gases from the lower pass into the upper.

Heated air is sometimes employed to cause the combustion of the fuel.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 5.—N° 3700.

FRANCILLON, Ernest.—" Improvements in dyeing fur and hair."

This Provisional Specification describes improvements in dyeing fur and hair.

In order to dye a fast and brilliant black on hair and furs of animals, a bath of water, chlorate of potash, chloride of ammonium, nitrate of aniline, and sulphate of copper is used.

When the fur or hair is thoroughly saturated to the roots, it is placed in an oven at a gentle and moist heat; afterwards a solution is employed of bichromate of potash and carbonate of soda.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 5.—N° 3701.

FAWCETT, Joseph Addey.—(*Provisional protection only.*)—" Improvements in means or apparatus for " supplying steam boiler and other furnaces with fuel, and for promoting and regulating the combustion " thereof."

This invention consists, firstly, in the application to the holes of hoppers for feeding the furnaces of steam boilers, kilns, and other articles of conical valves or stoppers fixed on spindles or rods, the fuel being admitted at the top and discharged at the bottom, the bottom series of stoppers being closed while the tap is open, and vice versa.

Secondly, in introducing fire clay bricks or blocks between and amongst the pipes in pipular boilers for promoting and regulating combustion of the fuel.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 5.—N° 3702.

HUNT, Bristow.—(*A communication from Bernard Edlich.*)—(*Provisional protection only.*)—" Improve" ments in wheels for railway carriages and other vehicles of like description."

These improvements consist in forming the nave of the wheel separate from the web or body, and interposing caoutchouc packings between the surfaces of contact of the different pieces so as to neutralize the injurious effects of vibration and concussions during the motion of the vehicle.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 5.—N° 3703.

THOMSON, David.—" Improvements in sawing machinery."

This invention relates to arrangements for adjusting and working the feeding and guiding rollers, and also to other details of sawing machinery. There are one, two, or more pairs of vertical feed rollers, and each roller or pair is held in an upper frame, which is movable horizontally on a lower slide adjustable horizontally upon the main framing. Levers acted upon by a weight, or weights, or springs, and having their fulcra on the lower slides, press the upper frames towards each other so as to make the rollers grip the deal or batten passing between them. The lower slides are adjusted by horizontal spindles, which are geared together by equal spur wheels, so as to move the slides equally to or from the centre line. The saw bench is also formed with guides for a slide carrying a second circular or band saw, with its driving pulleys for use when a deal or batten is to be cut into three boards.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 5.—N° 3704.

GIRDWOOD, Robert.—" Improvements in apparatus for crushing or reducing ores and similar materials, " and for compounding different ingredients, such as the oleaginous and resinous matters used in making " sheep smears."

[Printed, [illegible]. Drawing.]

A.D. 1868, December 5.—N° 3706.

DUTTON, Edward Kenworthy.—(*A communication from Adolph Moser.*)—" Improv
" ' mills ' employed in the finishing of woven fabrics."

This invention relates to the "gig mills" employed principally in the finishing of wo
consists in causing the cloth to make three or more contacts with the rising cylinder insteac
as heretofore. Four contacts are preferred, and the cloth is led nearly around the whole
the cylinder. In one arrangement the cloth passes over a leading roller on to the cylinder;
rollers and on to the cylinder a second time; then over a guide roller and around a secon
then over a guide roller and on to the cylinder a third time; then over small rollers and o
a fourth time; finally passing over a third leading roller to the second cylinder. The r
towards the cylinder in order to press the cloth thereupon, and an indicator or indicators is
to shew the pressure exerted. All the leading rollers are driven by a pitch chain, and the w
thereof are extending or stretching rollers.

[Printed, 1*s.* Drawing.]

A.D. 1868, December 5.—N° 3707.

NEWTON, Alfred Vincent.—(*A communication from John Lange.*)—" Improved appara
" flour."

The moisture is extracted from the flour by discharging it down a vertical channel, up
of air ascends. The channel being closed at top by a porous medium to separate the fine
from the escaping air.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 5.—N° 3708.

MASSON, Andrew.—" Improvements in steam engines."

The feature of novelty which constitutes this invention is the special arrangement of apparat
the cut off or admission of steam to the steam chests of steam engines by means of double bea
valves.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 5.—N° 3709.

ABRAHAM, John.—(*Provisional protection only.*)—" Improvements in central-fire cartrid
" loading fire-arms and ordnance."

According to one part of this invention the discharging parts of the cartridges are
follows :—The chamber to receive the anvil and percussion cap is made in one piece with the
the cartridge case. The chamber is first made of a cylindrical figure, and is closed upon a conica
of metal introduced into it from the open end or mouth of the cartridge case and fixed therei

A.D. 1868, December 5.—N° 3710.

HOLMES, JOHN.—" Improvements in the construction of kilns for the purpose of burning articles made " from plastic materials."

The object of this invention is to economize labour and fuel for the purposes named. The kiln is made by preference of circular formation, a chimney being placed in the centre of such circle; a flue is formed around the bottom of the chimney and communicates by means of trap doors in its outer wall, with chambers radiating around the chimney. Each chamber is furnished with a fire place built in the outer wall forming the kiln. Communications are made through the whole series of chambers by means of trap doors in the upper and lower portions of each partition wall.

Vent holes are placed in the roof of each compartment for the escape of the gases. Ordinary appliances are used for raising or lowering the trap doors.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 5.—N° 3711.

FOWLER, BARNARD, GREIG, DAVID, and BURTON, ROBERT.—" Improvements in the construction of " steam cultivating machinery."

According to this Provisional Specification the draft rope, when the direction of draft is changed, is made to give motion to a lever which lifts the tines and throws the rope to one side so as to cause the implement to turn.

A catch holds up the tines until they are freed by the attendant. One flange of each of the winding drums is made adjustable to compensate for the wear of the rope.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, December 5.—N° 3712.

PATERSON, DAVID HILLOCKS.—" Improvements in the process of bleaching, dyeing, or scouring textile " materials and fabrics, and in the machinery therefor."

This invention relates to the bleaching, dyeing, or scouring of flax, tow, cotton, jute, china-grass, hemp, wool, yarn, thread, and the various fabrics manufactured therefrom, and consists in the use of one or more steam chest or chests fitted with two or more revolving rollers.

The second and other chests are placed so that the solutions may flow from the first chest through each in succession and thence into a cistern or cisterns, from which they may be pumped back into the first chest.

The material or fabric to be operated upon is hung or put upon the rollers, and may be kept passing through the solution by means of a guide bar.

The solution is introduced cold by a pipe into the lower part of the chest, and steam is introduced by a pipe into the upper part of the chest.

I may use the ordinary bleaching or dyeing solutions, or solutions of manganate of soda and sulphurous water, and I wash the material or fabric with water after the operation when necessary.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 5.—N° 3713.

LAKE, WILLIAM ROBERT.—(*A communication from David Bruce.*)—(*Provisional protection not allowed.*) —" An improved apparatus for removing the stem of metal formed upon printers' type in the process of " casting."

The said invention relates to apparatus for breaking off the shank or stem of metal which adheres to printers' types when they are first cast. The said apparatus is provided with a frame which is attached to a type-casting machine. A gutter is provided for the type to descend in. A hole is formed through this gutter, and a plug fitted therein is attached to a lever. A sliding plate vibrated by this lever is connected with a trip hammer. When the type is discharged from the casting machine it drops into the gutter and slides down against a spring, where it is held by a movable jaw; at the same time the plug is drawn back from the hole and the stem or shank of metal on the type is broken off by the trip hammer and falls through the hole. The jaw then releases the type, which slides down the gutter.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 5.—N° 3714.

CLARK, ALEXANDER MELVILLE.—(*A communication from Lucien Henri Blanchard and Thèodore Chateau.*) —" A new or improved chemical compound for the disinfection and treatment of sewage and other liquid " and solid matters."

This compound consists of double phosphate of magnesia and iron composed, 1st, natural phosphates of lime of various kinds, which are reduced to powder and treated with sulphuric acid. The product of the treatment, consisting of sulphate of lime and acid phosphate of lime, is washed for dissolving the impure acid phosphate of lime, and the washing waters evaporated in a lead vessel until marking 25 to 30 degrees Beaumé. A cold solution of sulphate of magnesia and another of sulphate of iron are then added, or a mixture of the two, the proportions being about two thirds magnesia and one third oxide of iron. The mixture is then stirred to facilitate the formation and precipitation of the sulphate of lime, the the supernatent liquid forming the product of this invention, which is to be used for treating sewage and other liquid or solid refuse matters.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 7.—N° 3715.

BÉRARD, Aristide Balthazard.—" Improvements in the processes and apparatus for manufacturing, " collecting, and purifying gas for heating and other purposes."

I employ a kind of small blast furnace with a boss near the centre. The fuel is introduced into it through a pipe which allows of keeping up an overcharge on the lower beds to prevent the egress of the gases. The lower part of the gas generator consists of a moveable sole plate which may be removed and replaced by another. It is so arranged as to facilitate the discharge of the melted cinders reduced to the state of scoriæ or slags. The air is injected into it by tuyeres, over which steam tuyeres inject either steam overheated by its passage through pipes sunk in the brickwork of the furnace, or a mixture of steam and tar or other hydrocarbons. The gases produced are coiled down by contact with the tubes of a boiler thus producing steam; they are then washed under a shower of sulphate of iron or of lime water. They are dried by causing them to pass through perforated plates, and are purified by means of a mixture of sesquioxide of iron and sawdust placed in beds in a sheet iron box.

I apply to blast furnaces my improved mode of collecting gases by applying above the mouth of the furnace a tube for containing a surcharge of ore and fuel for preventing the egress of the gases. I employ these gases for heating purposes in general, and where applied to heating apartments I employ these gases or any others and burn them in an apparatus of a peculiar construction with the flame reversed so as to utilize the heat of the fuel and avoid noxious products.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, December 7.—N° 3716.

WOOLF, Israel Edward.—(*A communication from Charles Gustavus Mueller.*)—(*Provisional protection only.*)—" Improvements in apparatus for cooling milk and other fluids."

The nature of this invention relates to the construction, arrangement, and combination of a series of double walled concentric cylindrical vessels so adjusted one within the other that two different fluids may pass through the apparatus at the same time without coming in contact and impart or receive temperature as the case may be.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 7.—N° 3717.

CHISWELL, William.—(*Provisional protection only.*)—" Improved means for the purpose of preventing " horses slipping in snowey, frosty, or other slippery weather, and for rendering it unnecessary to remove " their shoes for roughing."

To form a rough or set of roughs to prevent horses slipping in frosty weather by means of a three cross bar or bar plate made of iron in two separate pieces, and furnished with three or more projecting steel pegs sharpened at one end and removeable by being screwed and unscrewed. The roughs complete may be affixed to the shoes of a horse's four feet and removed therefrom by means of a screw nut and small wrench in five minutes. The rough will preserve the horse's feet from injury, as removal of the shoe for roughing will be unnecessary.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 7.—N° 3718.

HOMFRAY, Alfred.—" Improvements in the manufacture of coke, and in machinery or apparatus to be " employed in the said manufacture.

According to this invention slack or coal broken into slack is consolidated into blocks with or without the use of water or bituminous matter by driving it little by little into strong moulds or rings by percussive or stamping machinery. This percussive or stamping machinery consists essentially of an anvil block on which the mould or ring supplied with slack is placed and a ram or hammer having a series of blows given to it by a steam or other hammer or press. The consolidated blocks of coal are converted into coke by being heated in a furnace, the blocks of coal being either contained in the moulds or rings or removed therefrom.

It is preferred to effect the coking of the blocks in a chamber or furnace provided with perforated tubes, through which the blocks are slowly passed.

The volatile matter driven off during the coking process escapes from the tubes into the chamber, and by its combustion renders only a small fire necessary on the furnace grate.

[Printed, 4d. No Drawings.]

A.D. 1868, December 7.—N° 3719.

RIDLEY, John.—" Improvements in apparatus for obtaining motive power."

The object is to obtain motive power from wind. A vane is combined with a pendulum and other parts so that the face of the vane is first presented to the wind to cause movement in one direction and its edge then presented, so that little resistance is offered to the return movement, which is effected by the pendulum or weight attached to the vane. The turning of the vane at the end of its course is preferably effected by a lever and weight acting on an arm carried out from the vane.

[Printed, 10d. Drawing.]

A.D. 1868, December 7.—N° 3720.

KRUPP, Alfred.—" Certain improvements in breech-loading ordnance."

These improvements consist in certain mechanical arrangements for more easily and effectually manipulating the wedge, and for opening and closing the breech, and also for effectually locking such wedge in its position for firing, and at same time accurately determining that the wedge is in its proper position in the gun. Also for igniting the charge in the gun by a vent through the centre of the wedge.

[Printed, 1s. 4d. Drawings.]

A.D. 1868, December 7.—N° 3721.

SIMONS, Edward.—(*Provisional protection only.*)—" Improvements in the construction of shoes for horses " and other animals."

This invention relates principally to shoes for horses and other animals to be worn either with or without the ordinary shoes, chiefly for the purpose of affording the animals a firm footing on ice or snow and at the same time preventing the hoofs from becoming " balled " or filled with balls of hardened snow. A modification of the invention is also applicable as an extra shoe to be carried when riding or driving, and which can be instantaneously applied and fixed by any person without the use of nails in case of the horse or animal casting a shoe on the journey.

The simplest form of the improved snow or ice shoe consists of a light steel or wrought iron frame provided with a ball plate for covering in the hollow part of the hoof, and three or more " calks " or projections beneath for giving a firm foot hold. A toe cap projects upwards in front over the toe of the hoof, and two heel clips are provided at the rear, the said heel clips being made of spring steel and connected together by a screwed and slightly cranked bar, by turning which they can either be separated for placing the shoe on the hoof and removing the same, or closed in for fixing the shoe firmly when required.

Where no ball plate is required the frame may be made in the form of an ordinary horse shoe, but composed of two parts hinged together at the toe, so as to open out for placing on or taking off, the screwed bar and heel clips being still retained for fixing the shoe. This modification is also applicable for ordinary use in the case of a horse casting a shoe on the journey.

[Printed, 4d. No Drawings.]

A.D. 1868, December 7.—N° 3722.

LAKE, William Robert.—(*A communication from George Kendall Proctor.*)—" Improvements in rooms " and apparatus for photographing by artificial light."

My invention relates to rooms or apartments and apparatus for photographing by artificial light, and is chiefly designed to provide the means for obtaining portraits at night and at other times when there is an insufficiency of natural light. The said invention consists chiefly in so constructing such rooms or apartments that the rays of light from a lamp placed therein will be reflected and concentrated upon the person or object to be photographed.

The interior of the said room or apartment is curved above and at the front and sides of the point whereon the light is to be concentrated, and a magnesium lamp or burner is arranged in such a position that its light

keyed one part of a segmental clutch, which is made to engage with another part on the whee
with an annular shoulder is secured upon the wheel in such a manner as to hold the shoulde
place without preventing the expansion and contraction of the rubber rings. The weight is
the tire through these rings. I sometimes construct the wheel with a double diaphragm exte
hub. The rim is flanged and formed with a concave groove, in which is fitted a rubber ring,
by a removable side plate. This rubber ring is made convex, and the tire, whose inner s
concave, is forced on over the said ring. The rubber ring if desired may be made rectangula
provided with projecting ribs with grooves between them, into which are fitted circular ribs
the interior of the tire.

[Printed, 1*s*. Drawings.]

A.D. 1868, December 7.—N° 3724.

CRETIN, Claude François Constant, and **WATSON**, James.—(*Provisional prot*
" Improvements in lamps for diving operations, and a new method of drawing off foul air fro
" fresh air to divers and lamps used in diving operations, the first named improveme
" applicable to lamps used in mines or other places where poisonous, explosive, and dang
" generated."

The feature of novelty which constitutes this invention is the arrangement and constructio
products of combustion in passing through their outlets cause a partial vacuum and consequ
supply of fresh air to the burner; the same principal of producing a vacuum being ap
withdrawing of foul and supplying of fresh air to divers.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 7.—N° 3725.

KENNAN, Thomas.—" Improvements in fences and in latches or fastenings for the gate
" which are applicable also as fastenings for other purposes."

This invention relates, Firstly, to certain improved means for securing or fixing the wires
strained wire fences in the upright standards or supports. Secondly, To improved means
fixing the horizontal bars of continuous iron bar fences in their upright standards or supports
to in improved construction of latch or fastening for gates to be used in iron or other fen
similar purposes. The wire or wire ropes are secured in their standards by being grippe
opposite sides of holes made in a moveable cap or clip fitted on the standard and in the stan
tightening or nipping action being obtained by a key or wedge. The continuous bars are s
form shoulders on one side without reducing the thickness of the metal, such shoulders
project on each side of the opening in the standard, and being held by a key driven in behind
bar. The junctions or ends of the bars are gripped between parallel lever jaws tightened u
the junction standards. The peculiar fastening consists of a combined sliding bolt and lifti
is acted upon by double inclines, causing it to lift whether pushed or pulled from eith
gate.

separate lengths of so many yards. Each division containing a certain quantity may be detached and sold separately if desired.

The winders may be of different colors to distinguish the quality of the threads thereon.

[Printed, 8*d.* Drawings.]

A.D. 1868, December 8.—N° 3727.

FARRAR, Charles.—" Improvements in machinery or apparatus for reducing wood to fibres, filaments, " shavings, or fragments to be employed in the manufacture of paper, bonnets, matches, and scale boards, " and for other useful purposes."

This invention consists of a peculiar arrangement of plane and serrated feeding rollers for reducing timber to filaments, shavings, or fragments of a finer or coarser nature according as they are intended for the manufacture of paper pulp, or for bonnets, matches, scale boards, and such like purposes. The plane is provided with raised edges which bear against the under side of the table carrying the hopper, so that the plane iron and scores and lancets will not be injured, whilst the wood can be reduced to the last shaving, one piece following another down the hopper as the cutting proceeds. The feeding rollers are held against the timber by springs, and are situate on the opposite parallel sides of the hopper, being rotated intermittently by a ratchet motion or friction feed. A " lewis " knife is subsequently employed for dividing the filaments transversely when found requisite.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 8.—N° 3728.

MACKIE, Alexander.—" Improvements in type composing and distributing machinery or apparatus."

This invention relates principally to an improvement on the type composing machine for which Letters Patent were granted to the said Alexander Mackie on the Nineteenth day of June, A.D. 1868. In the said machine a number of type pockets were attached to a revolving wheel, and the type were withdrawn from the said pockets by a stationery finger or pickpocket, the action of the said pickpocket being governed by the perforations in a strip of paper. In the present apparatus the pockets are fixed in a circle, and a number of pickpockets are attached to a revolving wheel. The said pickpockets are locked by means of tumblers or triggers acted upon by a system of levers, the action of the said levers being governed by perforations in a strip of paper nearly as before, and each pickpocket is unlocked by a key attached to the pocket containing the letter for which the pickpocket was set, the several keys differing in form and the triggers being differently set, placed, or combined, so that one key only will be able to unlock each pickpocket during one revolution of the wheel. Sometimes grooved or corrugated spaces are employed.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, December 8.—N° 3729.

BONNEVILLE, Henri Adrien.—(*A communication frcm William Gilpin.*)—(*Provisional protection only.*) —" Improvements in spinning looms."

This invention relates to a new and improved pressure piece by means of which a constant pressure may be exerted upon the rollers in a direction parallel to the plane of the loom, in that sort of loom where rollers are employed.

[Printed, 6*d.* Drawing.]

A.D. 1868, December 8.—N° 3730.

THICTHENER, William Joshephat.— Improvements in chronometer and other lever watches."

This invention consists of a jewelled double impulse lever and cross angular locking teeth escapement-wheel formed of gold so as to work without oil and admit of being regulated through the medium of shifting metallic points with gold and ruby sockets."

[Printed, 8*d.* Drawing.]

A.D. 1868, December 8.—N° 3731.

FARWIG, Julius Augustus, and HAYNES, Charles.—" Improvements in the manufacture of sheet " metal casks."

The top is made concave and convex ; the former in addition to great strength forms air chamber, the other portion of cask having convex flutes for the purposes of economy and strength ; when extra strength is req^{d} the inside is lined with metallic ribs.

The lap jointed double seams in centres of bodys also give addition strength.

[Printed, 8*d.* Drawing.]

[Printed, 8d. Drawing.]

A.D. 1868, December 8.—N° 3733.

REYNOLDS, Osborne.—(*Provisional protection only.*)—" Improved means of signalli
" cating between the passengers, guard, and engine-driver of railway trains in motion."

This invention consists principally in attaching some suitable explosive material or c
convenient part or parts of the train, such explosive material or compound being so attache
with a trigger, button, ring, or other suitable contrivance that it may be exploded by any of t
by the guard when necessary, and by its report shall convey the required signal to the guard

[Printed, 4d. No Drawings.]

A.D. 1868, December 8.—N° 3734.

RODEN, Richard Brown.—" Improvements in the construction of breech-loading fire-

This invention relates to that class of fire-arms in which self-ignition, central-fire, or ri
used, and is applicable to the " Snider " system, and also to breech actions in which th
moves in an upward or other direction, except in a direct line with the bore of the barrel.

The lock is dispensed with, and the striking piston is operated by a lock in connection w
or formed partly in the breech-block, and capable of locking the latter in position during
applying this invention to the " Snider " system, the oblique discharging piston is dispens
percussing piston, which, by preference, is placed in a horizontal position, is extended re
the back face of the breech-block, and is attached to a cocking-piece, with or without a frict
rear thereof, in a channel in the shoe formed by extending it beyond the recoil surface. T
is so constructed that its forward portion enters an opening in the recoil surface of the sh
locking the breech-action. The percussing power is derived from a spring which surrounds
piston, and is contained within the breech-block, in which position it is held by a hollo
which the piston passes. The hollow screw has ears or projections formed upon it to s
which has an operating or sear spring attached to the breech-block. The sear takes i
discharging piston or cocking piece, and its release is effected by the trigger. The disch
compressed by drawing the cocking piece and percussing piston backwards, and upon t
being drawn back to the full cock bent, the accumulated power of the spring is on the rel
sufficient to explode the igniting medium of of the cartridge. The opening in the recoil su
or barrel may be so arranged that the expended cartridge case may on being extracted be
the opening so formed.

[Printed 1s. Drawing.]

A.D. 1868, December 8.—N° 3735.

SPEIR, Thomas.—" Improvements in machinery or apparatus for cultivating land."

The feature of novelty which constitutes this invention is the arranging and fixing
ploughs on opposite sides of a series of diagonal shafts, the order of which is reversible b
pinions to suit the direction in which the [*machine or**] apparatus has to travel.

[Printed, 10d. Drawing.]

A.D. 1868, December 8.—N° 3736.

A.D. 1868, December 8.—N° 3737.

LANCASTER, Thomas.—" Improvements in economizing the consumption of fuel in furnaces, and for " inducing more perfect combustion."

Atmospheric air is caused to enter the furnace through a chamber or in some cases over the furnace doors, and is deflected by means of one or more deflecting leaves or plates capable of adjustment to regulate the quantity of air required to effect the most complete combustion. The chamber referred to is fixed at the end of the furnace, and has an " inlet " opening under the fire grate furnished with a regulator. The " outlet " forms a curvilinear overhanging deflector to direct the air from the chamber on to the back portion of the fuel.

The end of the flue or outlet is contracted by means of a damper worked by a cylinder actuated by the pressure of steam in the boiler and counterbalanced by a weight connected to the piston rod or connecting rod by suitable means.

In locomotive and marine tubular boilers contracted taper ferules are fixed in the tube plate at the end communicating with the uptake to retain the heat, &c. In locomotives as at present constructed it is proposed to place a perforated metal plate in the fire box, covered if required with perforated fire-brick to form an air chamber, over which a deflector is placed. Over the fire door inside the fire box a hinged deflector is placed, and on the fire door a slide deflector is likewise fitted.

In other grates a chamber is formed round the sides & back thereof, with perforations and channel outlets so as to admit air from the under side of the grate into the chamber and through the perforations and channels on to the fire.

In cases where great length of fire grate is required, and there is not sufficient room to place the air chamber behind the grate, increased length of grate, is provided by bringing out the front of the furnace.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 8.—N° 3738.

MOSS, Frank William, and MOSS, George.—(*Provisional protection only.*)—" Improvements in the " mode of and apparatus for preventing collisions on railways."

We dispose between each line of rails, at suitable distances apart, projections in the shape of double inclined planes. Each projection is made to slide in a transverse guide by means of a chain or wire attached to either side, each of said chains being connected to a bell crank placed at opposite sides of the line. One of these bell crank levers is connected by a chain or wire with a bent lever or other device pivoted in advance of the inclined projection near one rail so as to be depressed by the engine wheels in passing. Each engine is provided with a central vertical rod projecting downwards beneath the foot plate, and so arranged that on its coming into contact with one of the inclined projections the engine whistle will be sounded and the steam turned off. On the bent lever before mentioned being depressed by the engine the inclined projection will be moved to the centre of the line, so that the central rod of the engine following will come into contact therewith and so turn off the steam should it be following too closely on the first. When, however, the first engine has arrived at a safe distance beyond the inclined projection the latter will be moved back to its normal position by the engine wheel depressing a second bent lever pivoted at a safe distance ahead and communicating with said projection, which it withdraws from its central position to allow the second train to pass without coming into contact with the inclined projection, the first engine having previously set a second projection, which is afterwards thrown out of gear in its turn, and so on throughout the line.

By connecting the inclined planes to a third bent lever the inclined planes may be set in advance of carriages or trucks should they become detached from a train and run backwards down the line, thus warning the driver of a train on the same line of their approach.

Our invention may be applied at junctions, so that when a train is running from a branch on to the main line the advance of another train in either direction on the main line will be prevented until the first train shall have reached a safe distance on the main line, and similarly for trains leaving the main line or passing the junction.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 8.—N° 3739.

COOPER, George, and COTTERILL, John.—" Improvements in apparatus for the manufacture of " crucibles and other hollow articles from plastic materials."

The mould is mounted on a table carried by a vertical spindle, which is capable of receiving, in addition to an axial motion, both a vertical and a lateral motion, for the purpose of bringing the mould up to a stationary rotating " former," which turns in bearings on the cross head of the machine.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 8.—N° 3740.

COTTON, Charles Philip, and LYSTER, John Lionel.—(*Provisional protection only.*)—"Improvements in kilns for calcining limestone ores and minerals."

This relates to draw kilns, and the objects are to supply the fuel at or about the middle instead of at the top thereof, and an improved shape of kiln. The upper part of the kiln is of any usual shape; at a point about ⅓rd from the bottom the chamber suddenly expands, and from this expanded portion gradually narrows down to the draw hole. From or above this expansion or recess a set of tubes are laid preferably in a slanting direction through the casing to the exterior of the kiln, through which the fuel is introduced.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 8.—N° 3741.

POTTLE, William Henry.—"Improvements in umbrellas, parasols, and sunshades."

The invention relates to the runner and to arrangements whereby it is held in place, released, and operated.

The runner is formed with a longitudinal slot or opening, and it is provided with a ring or collar, which may be moved round or partly round on the runner in both directions. Suitable stop arrangements are provided to hold the ring in the required position. A portion of this ring is raised or arched or forms a sort of bridge piece. Two pins, studs, or stops are fixed, one at the upper and the other at the lower part of the stick in convenient positions for the operation of the runner. When the runner is to be released and moved the ring is turned so as to present its arched or bridge piece to the fixed stud or pin and allow of its passing over it when an effort is made to move the runner. But when the runner is to be held in position the ring is turned so as to present the edge of its main body to the fixed stud or pin, whereby the edge of the ring abutting against the pin, the ring and therefore the runner are kept in the required position.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 8.—N° 3742.

KIRK, John, and KIRK, John, the younger.—"Improvements in the manufacture of weavings made on bobbin net or twist lace machines."

The invention has for object improvements in the manufacture of weavings made on bobbin net or twist lace machines, and to produce fabrics known as trimmings or embroidery in any required width. For this purpose the inventors place between every carriage thread used (which thread proceeds from the bobbin encircled within the carriage) in that part of the fabric to be woven any given number of longitudinal warp threads, ranging in number according to the closeness of the weaving desired. The warp threads move so that each bobbin thread shall produce a portion of the weaving, and they are all weighted so as to draw off any required quantity of the bobbin or wefting threads according to the distance or number of longitudinal warp threads over which they should be drawn. One feature of this invention is that weavings of any desired width may thus be produced, and all the warp threads are woven together so as to present the appearance of being a single weft thread throughout the width of the breadth.

Another feature consists in this, that by ceasing to weave in any portion of the fabric which is being made the longitudinal warp threads may be opened to any required shape, and round each portion of fabric thus opened thick threads may be worked for the purpose of ornamentation, thereby producing fabric known as trimmings or embroidery.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 8.—N° 3743.

BALL, John, the younger.—(*Provisional protection only.*)—"Improvements in machinery or apparatus employed in the cutting off the superfluous threads or fibres from spots, sprigs, or other devices made on lace or other fabrics."

There is a standard at each end of the machine connected by tie bars near the bottom, and having three vertical arms, the front arms are connected by a tie bar, as are also the tops of the back arms. The upper ends of the central arms are connected by a tie bar formed with a knife edge and in front of the tie bar, but it is placed somewhat lower in another bar with a rounded smooth top edge. This bar is secured to the front of the central vertical arms and below the last named bar. Projections on the central arm form bearings for the axles of two rollers, one at the front of the centre of the machine and one at the back of the centre of the machine, and against each of these rollers is pressed another roller, which rollers lie in bearings which rock upon axles attached to the inner side of the front and back vertical arms, and are pressed to the other rollers by notch weighted levers at each end of the machine. All or some of these four rollers are covered with wire, card, leather, or other material. On the axle of the roller at the back of the arms is a toothed wheel driven by a worm on a vertical shaft in bearings attached to those arms, and having a speed pulley driven by a belt from the driving shaft which is in bearings at the back of the vertical arms and carries fast and loose pulleys between the standards, and outside the left back vertical arm. The driving shaft projects and carries a pulley with strap passing over pulleys on axles on the back vertical arm, and thence over a pulley on a knife roller carrying diagonal radiating cutters. Each cutter may have a smooth edge or a sickle toothed edge. The knife edges are close to the knife edged tie bar. The knife roller is in adjustable bearings in brackets adjustable on a horizontal bar, to which is screwed a thin plate, the front edge of which is near the top of the knife edged tie bar. This thin plate is adjustable by screw and nuts at the centre of the bar, the screw passes through a stretcher rod secured at each end near the ends of the horizontal bar, each end of which is carried by an arm swinging on an axle on an adjustable bracket on the back vertical arms. The front ends of the brackets rest on screw pins adjustable on the top of the tie bar which connects the tops of the front vertical arms. The brackets of the knife roller carry bearings for a brush roller whose bristles, hair, wire, or other materials project in reverse angle to the knives of the knife roller. The brush roller is driven by a motion from the knife roller. The bracket, knife, and brush rollers, horizontal bar, and plate may be raised clear of the knife edged tie bar, and the fabric may be passed clear out at each end of the machine through the spaces formed by the vertical arms. Two beams may be employed to receive the fabric before and after it has been operated upon.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 8.—N° 3744.

WHITE, George Preston.—"Improvements in constructing the roadways, platforms, or floors of "bridges and other structures."

This Provisional Specification describes forming the roadways, platforms, or floors of bridges and other structures of corrugated metal plates arranged to form an arch and with the corrugations extending across the arch from side to side.

Ties are applied to take the thrust of the arch, and longitudinal bearers are introduced between the arched plates and the tie bars.

The road metalling or other filling rests directly on the corrugated plates.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 8.—N° 3745.

BAINES, William.—"Improvements in apparatus for signalling and working the switches on railways, "and for signalling in railway trains."

This Provisional Specification describes improvements in working switches simultaneously with railway signals; also improved modes of constructing signal posts are described.

Also for distance signals a compensating apparatus is described to provide against the effects of expansion and contraction caused by atmospheric changes.

For signalling in railway trains a lazy-tong system of levers is employed on each carriage of the train, which can when desired be elongated or contracted and made to act the one on the other throughout the train.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, December 9.—N° 3746.

ANDERSON, Samuel Smith.—"Improvements in apparatus for the manufacture of bricks, tiles, and "other such articles from plastic materials."

The invention consists, first, in the use of a small steam cylinder for the purpose of actuating the cutting frames of brick and tile machines. This steam cylinder is placed either below or above the cutting table, and its piston rod (which passes through both ends of the cylinder) is attached to and drives the cutting frame to and fro; the slide valve of the cylinder is moved by a stud on the axle of the large wooden roller of the machine.

The invention consists, secondly, of an improved lubricated die, having an oil box attached to it, in which oil box are plugs or taps for regulating the supply of oil to the die. After passing through the plugs or taps the oil is supplied through a narrow passage to the entire inner surface of the die.

[Printed 10*d.* Drawing.]

A.D. 1868, December 9.—N° 3747.

PARLOUR, Joseph Thomas.—" Improvements in adjustable blocks for supporting the keel and bilge of " vessels in dock."

My invention relates to keel and bilge blocks, which are more especially designed for supporting a ship or other vessel laid up in dock for repairs. The blocks for supporting the keel are preferably made in three parts, arranged one below the other. Two of these parts are wedge shaped, and the lower one rests on metal tracks or ways on the bottom of the dock. The wedge shaped pieces are preferably made of cast iron. The third part or cap, on which the keel rests and which lies on the upper wedge-shaped piece, is made of wood parallel on its top and bottom surfaces. The top piece is provided with guides, which extend downward at the sides of the wedges. The wedges are drawn in or out under the top piece, which by means of the lateral guides is kept in a vertical plane as it is raised or lowered. At the ends of these ways I arrange guide pulleys, over which are passed chains or ropes preferably leading to a windlass, whereby the adjustment of the wedges is effected. A toothed rack or ratchet bar is arranged upon the inclined face of the lower block, and a pawl is pivotted to the upper block. The pawl is made double jointed, and is kept rigid by a strong taper bolt, which may be readily withdrawn when it is desired to remove the block. The blocks for supporting the bilge of the vessel are preferably constructed with a wedge, consisting of two parts, which are hinged or jointed together at the thin end of the wedge, and are made to open or close by means of keys, screws, or other suitable devices, and serve to slacken the block when it is desired to remove the same from the bilge. This double or hinged wedge is fitted to slide upon another wedge, which rests on ways or tracks at the bottom of the dock. The top part or cap of the block on which the bilge rests is fitted upon the upper surface of the jointed or double wedge, and is raised or lowered by adjusting the latter upon the lower wedge. The hinged or double wedge and the lower wedge are preferably made of cast iron, and are adjusted together and upon the ways by means of the windlass and the chains or cords passing over guide pulleys, as already described. The said wedges are also in like manner secured when property adjusted by means of a double jointed pawl or pawls.

[Printed, 2*s*. 2*d*. Drawings.]

A.D. 1868, December 9.—N° 3748.

MEADOWS, Francis.—" Improvements in machines for cutting strips of metal or other material, " particularly applicable to cutting 'brass rule' for use in printing."

The cutter is fitted in a carrier free to move in vertical guides. A link operated by a lever bears upon an incline on the carrier. The carrier carries a platen or presser fitted in a vertical guide therein, and a strong spring on the carrier presses on the platen. The platen holds the metallic strip while the knife effects the cut.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 9.—N° 3749.

NEEDHAM, Richard.—" Improvements in fuel economizers, and in apparatus connected therewith."

In the first place, this invention consist in obtaining the motion necessary to drive the scrapers of fuel economizers from the force of the feed water acting on a clack valve or on an Archimedian screw, or by any of the means usually adopted to obtain motion from water under pressure.

In the second place, the invention relates to improved mechanism for giving a to and fro or up and down motion to the scrapers of fuel economizers. This consists of a screw with a right and left hand thread acting on a nut, to which it imparts a backward and forward motion, and which is connected to the scrapers. This may also be accomplished by using two separate screws or a single thread screw with a reversing motion.

In the next place, this invention consists in casting a row of pipes in one piece with their connecting pipes, instead of casting each pipe separately and having a number of joints to make afterwards.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 9.—N° 3750.

BOLTON, James.—(*Provisional protection only.*)—" Improvements in apparatus for burning animal " charcoal."

This Provisional Specification describes conical retorts on horizontal axes.

Also retorts corrugated and otherwise formed to increase the heating surface.

Also arrangements for moving forward the charcoal in the retorts.

Also making the retorts in two or more lengths.

Also supporting the retorts on hollow axes passing through them and kept cool with air or water.

Also firing the retorts circumferentially.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 9.—N° 3751.

PARKINS, JOSEPH.—"Improvements in machinery for stamping, embossing, or printing in colors."

The die is carried from under the stamper to an inking apparatus, and on its return passes under a paper band in order to clean it from the superfluous ink.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 9.—N° 3752.

STURGEON, THOMAS.—(*Provisional protection only.*)—"Improvements in electrical apparatus for "communicating between passengers, guards, and engine drivers on trains, and for displaying the names "of stations in carriages, parts of which are applicable for effecting communication between persons under "other circumstances, and for other electrical apparatus."

Besides the usual connections from the battery to the ordinary vibrating electric bell, I make another connection by means of a wire passing through the points from which it is desired to have a means of communication. This wire is connected direct to the wire of the electro-magnet of the bell, so that as long as the connections are perfect it magnetizes the magnet and prevents the bell from ringing, but as soon as the contact is broken at any of the points of communication the hammer is released and the bell rings in the ordinary way. For communicating on trains I place a bell of this description in the guard's van and a contact breaker in each compartment. Contact is broken by pushing out a handle, which causes a roller to turn and move a piece of metal out of contact with two springs. A signal which is attached to the roller is pushed out at the same time.

Luggage trains should be furnished with the connecting wires and bells, so that if a portion of the train becomes detached the guard and engine driver may be apprized thereof. The apparatus to display the names of the stations consists of a band, upon which the names of the stations are printed, and which is connected to two rollers, one being furnished with a spring and the other with an escapement arrangement, which can be acted on by means of an electro-magnet, so that the guard by interrupting the circuit and making it again can cause the band to move, and thus bring up to view the names of the stations in succession as the train arrives at them.

To connect the conducting wires of electrical apparatus I use a snap similar in principle to a common necklace snap, but I may use a sharp edged ring instead of the socket.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 9.—N° 3753.

GOODES, ALFRED GEORGE.—"Improvements in the manufacture of cigars and cheroots."

Instead of using tobacco leaf or paper for the inner or "bunch" wrapper of cigars and cheroots, I use the husk of the Indian corn plant or maize (zea mays) as a bunch wrapper, whereby the flavour of the cigar or cheroot is considerably improved.

The cigar or cheroot is finished in the ordinary way.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 10.—N° 3754.

GRIFFITHS, WILLIAM.—"Improvements applicable to bits and bridles."

The object of this invention is to enable the rider or driver of the horse to acquire perfect control over the animal and to prevent bolting.

Each end of the bit bar is provided with an extra ring smaller than the rings through which the guiding reins are fastened, and through these supplemental rings the safety reins are passed, being crossed under the jaw of the horse and coming over the upper surface of the jaw, by which means, when these reins are pulled tight, the horse's mouth is compressed and the bit bar firmly drawn against it; and when the bit bar is formed with a hinge or joint in the centre it assumes an obtuse angle, by the pull of the reins the apex of the angle acting against the roof of the horse's mouth, and bringing him under complete control.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 10.—N° 3755.

NORMAN, JOHN.—"Improvements in apparatus for grinding grain or other granular matters."

The improved apparatus comprises two serrated plates, between which the grain passes, whilst one plate has imparted to it, by means of a revolving crank or its equivalent a short rapid reciprocating stroke, or both plates may be made to reciprocate in different directions. The plates or their serrated surfaces may be made of steel, glass, burr stone, or other sufficiently hard material.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 10.—N° 3756.

PLATT, William Henry.—(*Provisional protection only.*)—"Improvements in the construction of "shuttles."

Instead of cutting the square mortise hole beneath the shuttle for the reception of the spring I only mortise away sufficient from the upper part of the shuttle to receive the squared end of the shuttle peg, and from the base of this short mortise I bore out a hole in the direction of the shuttle point, and I insert therein a straight or flat spring slightly curved or bent at one end, supporting and holding the said spring by means of two pins or cotters driven in from the side of the shuttle.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 10.—N° 3757.

MANWARING, William George.—(*Letters Patent void for want of Final Specification.*)—"Improvements in sewing machines."

This invention relates to lock stitch sewing machines, wherein the needle is actuated from a rotatory driving shaft or spindle carried in the fixed arm of the machine, and consists essentially in transmitting motion from the over head shaft to an oscillating or vibrating shuttle carrier by means of an eccentric crank pin, cam, or other mechanical equivalent mounted on the driving shaft, and connected by a connecting rod and short lever arm with a rocking shaft situate below the cloth plate, which rocking shaft carries the vibrating shuttle drum. By this arrangement the necessity for gearing for transmitting motion to the lower shaft is obviated. For moving the cloth or material to be sewn I use what is commonly known as the four motion feed, and I obtain the motions by means of a tappet or wiper on the rocking shaft, which tappet bears against the feed bar, the latter sliding on a stud and being brought back by a spring.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 10.—N° 3758.

MATTHIESSEN, Augustus.—"Improvements in the treatment of wood capable of yielding materials "suitable for the manufacture of paper."

This invention relates to the preparation and treatment of wood capable of yielding woody or ligneous fibre or filamentous and fibrous materials suitable for the production of paper; and consists, first, in submitting wood in a state of division, such as shavings, sawdust, or disintegrated wood, to what is known as a retting process; that is to say, the wood in a state of division is steeped in water, and is allowed to undergo a retting or fermenting process, by which certain constituents of the wood are decomposed and removed, and the subsequent treatment of the ligneous fibre is thereby rendered more economical and is more easily effected. Second, in submitting wood in a disentegrated state to the repeated and successive action of water at a temperature below 212° Fahrenheit, in order that those constituents which are soluble in water may be removed either before the retting process is adopted or before the said ligneous fibre is further operated upon, so as to render it suitable for the production of pulp or paper. The fibrous material after having undergone either the retting process or the water process before described, or both of them, may be submitted to the action of an alkaline ley, and to the process of bleaching, as is well understood. Third, in submitting timber or wood in bulk to the action of water or of an alkaline solution, either at the ordinary or at an elevated temperature, and either at the normal or at an increased pressure, in such a manner as that the water or the alkaline solution shall purge the cells and other portions of the vegetable structure from the sap and other fluid constituents contained therein; the timber or wood so purged or purified may then be employed for the production of paper in the manner as hereinbefore described, or otherwise.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 10.—N° 3759.

BONNEVILLE, Henri Adrien.—(*A communication from Charles Auguste Constantin Eckhold.*)—A new "and improved apparatus for measuring distances, altitudes, and angles."

This invention relates to a new and improved apparatus for measuring the bases of triangulation, horizontal or oblique distances, altitudes, and angles.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 10.—N° 3760.

GRAY, William, and BIGGIN, Thomas.—"Improvements in the manufacture of spanners and "wrenchers in cast steel for engineering and all other purposes, and in the machinery and apparatus "employed in such manufacture."

The process of casting in cast steel spanners and wrenchers of every size and shape required by the trade, and the moulds and other apparatus required for their manufacture.

Also moveable or fast cores, and the placing of the impression in the mould to receive the casting in a slanting position so that the molten metal when poured into the mould falls to the bottom and does not come into contact with the moveable or fast cores.

[Printed, 1*s*. Drawings.]

A.D. 1868, December 10.—N° 3761.

JACKSON, William Stirling.—"An improved method of treating bones and the products obtained "therefrom so as to render them available for various useful purposes."

The novelty of this invention consists in treating bones and the products arising from such treatment in such a manner as to render the same available for various useful purposes.

The means employed are both chemical and mechanical. The Specification sets forth different methods of operating upon the different products by chemical and in some cases mechanical agents or both according to circumstances for reducing them to their proper commercial conditions, all of which methods are fully set forth in the Specification.

[Printed, 6*d*. No Drawings.]

A.D. 1868, December 10.—N° 3762.

SMITH, Isaac, and SIMONS, Jean Francois Nicholas Biesman.—(*A communication from Charles Nelson.*)—(*Provisional protection only.*)—"Improvements in setting steam boilers."

According to this Provisional Specification the boiler is enclosed entirely in brickwork with an air space between the brickwork and the boiler.

This space is in connection with the flues, but the draft does not pass through it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 10.—N° 3763.

BROOMAN, Clinton Edgcumbe.—(*A communication from Theophile Caranton.*)—"Improvements in "roofing houses or other buildings."

This consists in roofing with oblique slates secured by bent metallic wires and staples. Square slates are employed without a shoulder with a notch at the base to receive the wires fixed to oblique lath-work. The lower part of each wire engages into the notch of a slate. Near the sides and bottom of the roof other small wires may be added to the single fastening.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 10.—N° 3764.

BENTLEY, John Flowers.—"Improvements in the mode of sinking or forming wells, and in the "apparatus to be used therefor, parts of which improvements are also applicable for the sinking of cylinders "or caissons for other purposes."

This primarily relates to sinking wells where the strata are composed of finely divided earthy matter containing water.

A cylinder is employed, the lower end of which is conical; the bottom of the cone is screw threaded internally to allow passage to a correspondingly threaded pipe which is carried up through another opening in the top of the cylinder to the surface of the ground. The threaded portion of the pipe has apertures, and the upper or other portion of the cylinder is also furnished with apertures. The cylinder is surrounded, or partly so, by a filter, or is made or partly made of filtering material. The upper part of the pipe is fitted with a pump, and an air tube provided with a valve is also carried up from the top of the cylinder. In sinking a well a hole is dug down to the silt, and the apparatus lowered to allow its conical end to enter the silt; water is admitted into the cylinder to increase the weight; the pipe is lowered through the end of the cylinder into the silt; when the pump is worked the wet silt passes through the apertures into the pipe and is raised to the surface, thereby leaving a space below the conical end of the cylinder, which thus sinks as the silt is raised. When it has sunk sufficiently the pipe is raised so that silt can no longer enter; the pump is again worked when water flows into the cylinder and is raised through the pipe. Pipes provided with filters may be carried out from the cylinder to act as feeders thereto.

The mode and means of sinking the well cylinder also applies to sinking cylinders and caissons in forming foundations, &c.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 10.—N° 3765.

DAWES, William, and RAMSDEN, Edward Archibald.—"Improvements in harmoniums and "other musical instruments."

This invention has for its object the obtaining automatously a single-note sub-bass.

This is achieved by a mechanical "attachment" which causes upon certain stops the lower note only to speak or sound by silencing automatously all the notes above the one which is required for the "sub" or pedal bass of the music being played.

[Printed, 1*s*. Drawings.]

A.D. 1868, December 11.—N° 3766.

PICKLES, John, RAMSBOTTOM, Edward, HAGGAS, Samuel, FOULDS, Samuel, SHACKLETON, Joseph, and BERRY, William.—"Improvements in spinning and twisting frames."

This invention dispenses with the necessity of removing the bands from the wharves of the spindles, and facilitates the processes of "doffing" and refilling by the use of a double threaded screw upon the upper end of the spindle having a plain part just above and below such thread, the flyer having its female screw at the top of its head, and a plain part in the lower portion of the same.

Also in consequence of the construction referred to the flyers do not "fly off" the spindles and much time is saved.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 11.—N° 3767.

WAYGOOD, Richard.—(*Provisional protection only.*)—"Improved arrangements or means connected "with the ventilation of mines."

Valves are fitted in the ventilating shaft and the approaches thereto, which close against the return current created by the vacuum produced in the pit when an explosion occurs.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 11.—N° 3768.

HOLDER, Thomas, and DOVER, George.—"Improved appliances to be adapted to horse-shoes as a "substitute for what is termed roughing."

This invention consists in adapting a clip shaped piece of metal or appliance to the front part of a horseshoe when fixed to a horse's foot by nails in the usual way; also in placing roughing pieces or points of steel loosely in such said clip piece so that they can only be removed or withdrawn when the clip is taken off or removed from the shoe when the roughing points are worn down or otherwise rendered useless.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 11.—N° 3769.

CARTER, Henry, and EDWARDS, George Henry.—"Improvements in the construction of breech-"loading fire-arms."

According to this invention improvements are made in the closing breech bolt or plug, and in the means of opening the same: in the means of discharging the central fire cartridge, and of extracting the same when discharged.

The under surface of the breech plug is provided at each end with a slotted guide, that nearest the barrel holding the striking pin and its stop or catch released by the trigger: the other containing the sliding locking catch, whereby the plug when shut down is secured in the body of the arm. A spring is applied in a tube on the striker, into which tube a stem on the closing catch enters and compresses the spring. So also the descent of the stop of the striker behind a vertical extension of the trigger will draw back the striking pin against the spring, and the pull of the trigger will release it. Thus the arm is rendered self cocking by the mere action of closing the breech, which is readily reopened by a finger piece or slide on the upper surface of the breech block and attached to the locking catch.

The extractor consists of a fork or arched piece in connection with the breech plug, the elevation of which throws back the extractor and withdraws the cartridge.

In another example, the finger piece consists of a side lever acting as a crank, whereby the closing catch of the bolt is moved and its stem made to act on a tumbler lever of the striker, which is drawn back by the act of opening the breech and held in position for passing to the trigger catch. When the breech is closed the finger piece is turned back parallel to the barrel, and the striker is dependent on the trigger action, being released from the action of the crank lever.

[Printed, 1*s*. Drawing.]

A.D. 1868, December 11.—N° 3770.

KOTZÓ, Paul.—"Improvements in reaping machines."

The rake arms are fixed in sockets in a cross head keyed onto the end of an inclined shaft which is driven by bevil toothed gearing below.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 11.—N° 3771.

BAILEY, William Henry.—"Improvements in apparatus for indicating and regulating heat."

In the first place, my invention consists in arranging pyrometers so that the adjustment to compensate for the permanent expansion may be made without taking any part in pieces. I screw the case which carries the dial on to the tube up to the proper position, and secure it by a stud passing through a slot. The slot is long enough to allow of the dial being screwed up after the substance has been permanently expanded. The same principle might be applied to the hand or pointer.

In the second place, I cause a pyrometer to ring a bell when the temperature rises to a certain height. This is done by connecting the hand to one pole of a galvanic battery, and when the temperature rises above the desired height the hand comes in contact with an adjustable piece of metal which is connected to the other pole of the battery, and the current being thus completed is caused to ring a bell. It may also be made to indicate the number of times a certain temperature has been reached by means of an electro-magnet acting on a lever which gives motion to an ordinary counter.

For some purposes I use a "blind dial," which, instead of being graduated in the ordinary manner, has signs, such as A, B, C, D, E, which form a scale of temperature understood by those who understand the working of the instrument, but not by others.

For pyrometers which are to be used with acids I coat the outer tube with some enamel which will resist the action of acids, or I make it entirely of porcelain or some other acid resisting substance.

In the next place I facilitate the adjustment of the instrument known as Wood's pyrometer by using a small set screw applied to the lever in such a way that by turning it the joints may be moved nearer to or further from the fulcrum. I also improve this form of pyrometer by surrounding the tube upon the expansion of which the indications depend with some nonconducting material.

In the next place my improvements consist in connecting the tube of a pyrometer to a damper in such a manner that the expansion and contraction of the tube causes the damper to open and close.

In order to indicate the temperature of the air in a blast pipe I use an instrument similar in principle to Wood's pyrometer, the blast pipe itself forming the tube upon the expansion of which the indications depend.

Lastly, my invention consists in graduating the dials of certain pyrometers so that they will indicate the full temperature to which they are exposed for a given time, say thirty seconds, although that time may not be sufficiently long for the pyrometer to have attained that temperature itself.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 11.—N° 3772.

WALTON, Frederick.—"Improvements in the construction of houses and other buildings or "structures."

This Provisional Specification describes forming structures of a number of iron bars or sheets placed horizontally one over the other with short lengths of pipe between; the pipes are placed vertically one over the other; a rod is passed through the bars and lengths of pipe and screwed up tight. The frame so made may be lathed and plastered or finished in various ways.

The Specification also describes various other similar structures of wood. Also constructing chimney shafts of cast iron tubes having external flanges; rods pass up through these flanges and are screwed up tight.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 12.—N° 3773.

BAYLEY, Edward Hodson.—(*Provisional protection only.*)—"Improvements in filter vans and carts, and "in apparatus connected therewith, some of the said improvements being applicable to filters in general."

This invention refers to improvements upon that set forth in the former Specification, No. 2564 (A.D. 1867), also to other improvements.

The principal object of the invention is to increase the distance between the bottom of the cistern or the cocks, valves, or other outlets depending therefrom and the ground. Three mud wells are made use of, the two outer ones containing a portion of the filtering matter. The wells are thus made shallower and the filters proper are able to be made shallower than they were before. Seat rails, footboards, cushions, and an awning can be used to adapt the van for carrying wounded soldiers or stragglers. The filter covers each consist of a flat plate projecting inside the tank, fastened and made water tight by suitable bolts, nuts, and washers. Sliding valves may be used to the bottom of the mud wells instead of sediment cocks. By the adoption of these improvements the lowest part of the filtering apparatus is much higher than before and the van more serviceable.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3774.

HUNT, Bristow.—(*A communication from Jean François Cail.*)—(*Provisional protection only.*)—"Improvements in the method of and apparatus for evaporating and cooking."

This invention relates to a new combination of apparatus and a new method of working which offer the facility with only one attendant and with the most economical utilization of caloric possible of combining with processes hitherto known new applications advantageously adapted to the necessities of various processes lately invented, such as, for instance, the alcohol processes patented in France by Mr. Perier, the ozmoze processes patented by Mr. Dubruntant, those for the treatment of pulps combined with the treatment of molasses by Mr. Champonnoir, and those for intermittent maceration patented by the present inventor.

The apparatus in question is composed principally of five tubular boilers constructed as to their details in accordance with the Specification annexed to the French Patent of Mr. Cail, dated 13th July 1860, for an apparatus for evaporating by three boilers, with some additions hereinafter described.

Besides the five boilers it is provided above and below with an injection or a surface condenser, or with condensers of another kind, the action and advantage of which are also described.

Amongst the new arrangements in the construction of the said boilers I may remark in the first place that instead of the safety vessels inserted previously between the triple boilers a circulating apparatus of the form previously patented by the present inventor is placed directly and vertically on each boiler. This apparatus being adapted directly to the evaporating boilers offers this advantage, that as safety vessels they will withdraw at the same time and in a continuous manner from the boiler the parts of the juice carried over by the ebullition, and that particularly in the operation of concentrating raw juice to be treated by alcohol under Perier's process as above mentioned, they will establish the necessary circulation of these juices which are subject to sudden and violent action. To guard against this carrying away of the juice the upper part of the boilers above the tubular part is constructed comparatively according to the arrangements described in the Specification attached to a French Patent granted to the present inventor, and dated 23rd May [illegible], increased to nearly half its height by raising the upper part.

There are also long vertical openings provided with glass made in the boilers for watching the operations instead of ground glasses which are difficult to see through, a modification which has also been the subject of a French Patent in the name of Mr. Lachaume, manager of the present inventor's establishment at Douai.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3775.

MILLWARD, John.—(*A communication from Thomas Sim.*)—"Improvements in preserving meat and animal matter, and in apparatus employed for that purpose."

This invention consists in treating meat with gaseous bisulphide of carbon, proto-sulphide of carbon, or carbonylic sulphide, with or without phenic acid, methyl, or other product of the destructive distillation of coal. For this purpose the meat is suspended in an exhausted and heated vat or receiver, into which the said gases are then introduced.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 12.—N° 3776.

WOODS, Alexander.—(*Provisional protection only.*)—"Improvements in the construction of spring mattresses."

This invention consists in forming mattresses by preference of three frames, one placed on the other, the central frame being somewhat smaller than the other, whereby the frames when united together by webbing have an indented shape all round. Spiral or other springs are placed between the frames. The space comprised between the top and bottom frames is also supplied with springs. The top of the mattress may be stuffed with wool, hair, or other material.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3777.

LAW, HENRY.—(*Provisional protection only.*)—" Improvements in water-closets."

The novel feature of this invention is by means of a valve-cock of a peculiar construction in connexion with an expanding vessel to regulate the quantity and force of the water to be supplied to water closets.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3778.

ELLISON, CAIN, and PARKINSON, EDWIN.—" Improved means or apparatus to be used in measuring " the human body for garments."

The invention consists in an upright stand having various horizontal and vertical parts projecting therefrom and tapes in connection therewith to suit and be adjustable to the various parts of the human frame for the purpose of measurement.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 12.—N° 3779.

SMITH, THOMAS.—(*Provisional protection only.*)—" Improvements in smiths' bellows."

This invention has for its object the construction of the metal fittings and parts of the pipes of smiths' bellows in such manner that they may be enclosed in the body of the bellows for convenience of packing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3780.

POIRIER, ZACHARIE.—" A new or improved safety stopper for bottles and other vessels."

This invention consists of a new or improved safety stopper intended for glass, stone, and other bottles of every description, also carboys and other receptacles or vessels for sulphuric and other acids or essences, and for closing tightly all bottles containing champagne and all other wines, lemonade, soda water, ginger beer, and all other gaseous or effervescing drinks.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 12.—N° 3781.

COWPERTHWAITE, STEPHEN.—(*Provisional protection only.*)—" Improvements in machinery for turning " materials."

This invention consists of apparatus to be applied to an ordinary lathe, in which apparatus a series of cutters is so arranged in a drum that as it revolves each cutter is successively caused to act on the blank to be turned, so that the shape thereof is perfected during one revolution of the said drum. The said drum is mounted opposite the blank to be turned, and has slots in its periphery in which the cutters are so mounted as to be capable of a sliding motion, the said cutters (the edges of which have a shape corresponding to that to be given to the blank) being forced outwards by tappets on the drum, so that the edge of each succeeding cutter projects further from the drum than that of the preceding cutter, and thereby deepens the " cut " in the blank. The drum is stopped on the completion of each revolution by a stop rod arrangement which enters a hole in a disc fixed on the driving shaft.

In some cases fixed adjustable cutters (secured in any convenient manner) are used in place of the sliding ones.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3782.

BROOMAN, CLINTON EDGCUMBE. — (*A communication from Isidore Rollet.*) — (*Provisional protection only.*)—" Improvements in apparatus for indicating hours and days or for giving other notifications, specially " applicable to post office letter boxes."

In applying the invention to letter boxes there are two turning prisms; one on a vertical axis shows the times of collection, and the other on a horizontal axis shows the days of the week. The front plate of the box has openings to allow the characters to be seen. If the prisms turn in situ the edges of the holes must be bevilled, but this mode leaves spaces or chinks, which let in dust or rain. Therefore the edges are not bevilled, and the prisms are provided with means of being withdrawn within the box when the indications have to be changed. Check prisms or indicators are combined with those above described, to show the manipulator when the prisms have been correctly adjusted. Means are provided to hold the parts when moved to the required position. The invention applies to calendars, and generally where a frequent change of indications is required.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3783.

PRESTON, George, and PRESTIGE, John.—" Improvements in engine lubricators."

This relates to lubricators for the use of tallow or other hard fatty substances. The novelty lies in fitting a spiral tube or worm inside, or passages round the outside of a cylinder or box containing the tallow. The steam entering the tube or passages immediately melts the tallow, which then flows into the main steam pipe.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 12.—N° 3784.

ERSKINE, Francis.—(*Provisional protection only.*)—" Improvements in means or arrangements for " economizing fuel and consuming smoke, applicable to steam boiler and other furnaces."

This invention consists in contracting the space for the products of combustion above the fire bridge, and forming an open space below the fire-bridge between the ash pit and the flue beyond the fire-bridge, by which means heat or flame is drawn through the fire bars, and passes mixed with air under the fire-bridge, so as to meet and combine with the unconsumed gases passing over the fire-bridge. The spaces above and below the fire-bridge are regulated by dampers, and additional bridges are sometimes added in the flues, combined with the arrangements above described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3785.

HAMILTON, John, and CRAWFORD, Jethro Baxter.—(*Provisional protection only.*)—" Improvements in tools and mechanism to be used for cutting and dressing stone, rocks, or other similar materials."

The feature of novelty which constitutes this invention is the employment of a thin blade of steel as the cutting tool, backed by a piece of metal which forms a rigid bearing for the tool when in use.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3786.

PRINCE, Alexander.—(*A communication from Anthony Leonard Fleury.*)—(*Provisional protection only.*)—" Improvements in the treatment of ores of gold and silver and of quartz and siliceous substances in order " to obtain and apply the products therefrom to various useful purposes."

According to this invention powdered gold or silver ores are mixed with fluoride of calcium, fluorspar, cryolite, or refuse from the workings of cryolite, mixed with water and placed in a boiler containing an agitator.

Steam and carbonic acid are then introduced until the whole is dissolved into an opalescent milky liquid. When cool the whole is passed through an amalgamating bath containing mercury, whereby the gold is taken up and recovered by subliming the mercury in a retort.

The residue, mixed with lime, oxides of iron, zinc or lead, forms a paint; mixed with sand and clay it forms a cement; mixed with white quartz sand and compressed it forms a white flint marble for statuary and ornamental work, and is also useful for a variety of purposes.

Quartz, sand, or pulverized flint or quartz are mixed with gas-tar, petroleum, or its refuse, or any other suitable carbonaceous substance or hydrocarbon sufficient to make a stiff paste, which is then moulded into suitable shapes, such as small balls or pieces, and placed in a crucible or tube of plumbago or other refractory material, to be heated by a furnace until a bright red heat is obtained.

Sulphur vapour, or bisulphide of carbon, or sulphuretted hydrogen gas is then introduced by means of a tube or opening, and the heat and carbon will cause the withdrawal of oxygen and form carbonic acid, while the sulphur will combine with the silicium and form sulphide of silicium in the form of a greyish white powder, which being brought in contact with water or steam decomposes the oxygen and hydrogen thereof, forming sulphuretted hydrogen and hydrate of silica, which is applicable to the manufacture of glass, porcelain, artificial stone, paints, cements, fire-proof and water-proof coatings, and various other useful purposes.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3787.

BREMME, Gustav Albrecht Carl.—" Improvements in machinery for breaking and softening flax " and other fibrous materials, which improvements are applicable to calendering rollers and other purposes " where the same kind of reciprocating rotary motion can be usefully adopted.

My invention relates to new and improved apparatus for effecting this movement, that is to say, for causing the continuous rotary movement in one direction of a shaft or prime mover to communicate to other parts of the mechanism a reciprocating rotary movement greater in the one direction than in the other.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 12.—N° 3788.

MARSDEN, Henry Louis Delabene.—(*Provisional protection only.*)—" Improvements in the construc-" tion of framings and joints applicable to bridges, piers, roofs, vans for railways, and generally for carpentry, " joinery, furniture, and framing purposes in wood, metal, and other materials."

Two pieces of wood or metal are placed across each other and in contact, and are then bolted, screwed, pinned, nailed, or otherwise rigidly fastened together. A third piece is then placed in one of the angles formed by the intersection of the first two and then bolted to these two.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 12.—N° 3789.

HINE, John.—" Improvements in apparatus for cutting or dressing millstones."

In dressing millstones with diamond or hard stone cutters I use a rectangular frame having a slot in which works the block carrying said cutters. This frame is atttached to a radial arm turning on the centre of the stone for cutting tangential lines, a screw turned by hand being provided on a bed plate for advancing the frame to make the next cut.

The diamond cutter is set in a conical shank at the intersection of two cross cuts and is secured by a collar. Several cutters may be placed in the block for gradually increasing the depth of the cut. In another arrangement I joint a bar to a radial arm from the centre of the stone. This bar carries one end of a hand lever provided with the cutters. The cuts are made by partially rotating the hand lever so as to form arcs of circles, while the plane is shifted from making another cut or cuts by means of a screw. The bar may also be self-acting so as to advance after each cut by pivotting it to a circular centre plate having vertical teeth gearing with a screw on the bar carrying a ratchet at one end. Each time the hand lever is moved the ratchet is turned a tooth and also the bar by means of the toothed plate for making another cut or cuts forming curves of different centres. According to another arrangement for making straight cuts I fix a rectangular frame on the stone containing a second sliding frame carrying a diagonal bar for receiving the cutter block, which is traversed therein by a hand lever. The sliding frame is moved after each cut the desired distance by means of toothed gearing in connexion with the hand lever.

[Printed, 2*s*. Drawings.]

A.D. 1868, December 14.—N° 3790.

NORFOLK, Richard.—" Improvements in reaping machines."

My invention consists in raising and lowering the platform on which the corn is collected by self-acting machinery actuated from the driving wheel or other convenient part of the machine. A cam or other equivalent acts on a lever projecting from the platform. This cam has a long dwell to hold the platform up while the corn is accumulating upon it, and with a recess to allow the platform to drop suddenly when a sufficient quantity of corn for making a sheaf has been cut.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 14.—N° 3791.

MEAKIN, William.—" Certain improvements in the construction of adjustable lock spindles and the " fittings thereto."

The method of adjustment obtained by this invention is as follows :—Two bearing or rose plates are secured in position on the door, a square spindle having a knob or handle (with the ordinary attachment revolving in one of the bearing plates) firmly fixed to one end is passed through them and through the follower of the lock. A disc is passed on to the projecting portion of the spindle and the other knob having a ferrule with a projecting collar forming a circular recess for the disc is then screwed on to the spindle (having in its centre a hole tapped to suit a screw thread cut on the angles of the spindle) until a good working fit is obtained. A set screw or pin is then passed through an opening formed in the rim of the bearing or rose plate and through one of four or more holes formed in the collar on the ferrule of the knob, into one of the tapped holes provided in the disc, and then screwed up so as to " jam " against one of the square faces of the spindle. The whole arrangement is perfectly firm when fixed and free from any shake or chatter, and when the "rose" is screwed on to the rim of the bearing or rose plate no screws are visible.

[Printed, 8*d*. Drawing.]

holding the switches in their places. The weight is suspended to the lever above
vibrates on a pin, so that its position can be readily altered from one side of the le
which alteration changes the normal state of the points, but does not fix them immovabl

2ndly, in introducing a double bolt lock in the rod connection between the levers
signals representing the facing points at a junction. When, say, the main up sign
connected with the signal rod is drawn through an aperture in the point rod, holdi
position for the train to pass; in this position of the point rod the up branch signal
because a bolt connected with the rod of this signal cannot enter the point rod, b
connected with the up signal is withdrawn and the facing points are set right the up
be given, because its bolt can then pass through the point rod and hold it firmly.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 14.—N° 3794.

SMITH, Sydney William.—(*Provisional protection only.*)—" Improved machinery
" spinning, twisting, doubling, drawing, or condensing fibrous materials."

The first object is to dispense with the "mule" in the operations of spinning, twi
(directly and continuously) by means of a spinning frame, in front of which is placed
rollers (of a construction afterwards described) adapted to receive the fibrous material
from the holding rollers of the frame.

The second object is to spin the fibrous material into yarns directly from the conde
so dispense with intermediate machinery, hollowed rollers of similar construction to
referred to being placed in suitable position in front of the condenser, accomplishing
the aid of the adjunct holding rollers and the spindles.

The peripheries of the rollers first referred to, and which follow the holding rollers,
longitudinal sections of (say) from three to eight parts and fitted with grooved slides up
shafts.

Reciprocatory motion is imparted to the sections by means of cams or scrolls (withi
rollers) driven by suitable means.

Rotary motion is likewise given to such rollers by ordinary means. The result is a ru
and drawing motion, the speeds being varied as circumstances require.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 14.—N° 3795.

ALLMARK, Joseph, and BLAKEY, Wray.—(*Provisional protection only.*)—" An
" tobacco cutting machine."

Our improvement consists in enabling the operator to cut various lengths or thicknes
will, to accomplish which there is attached to a false bottom a half nut working on a scr
being acted upon by a spring or other flexible material to keep the same in gear while worki

This consists in making locks, the catch bolt of which does not project when the door or other object fitted with such locks is open. The front of the catch bolt is preferably flat and square, instead of being inclined. In one arrangement the chief novelty is a spring plate, which engages with a stop on the catch bolt and is released, when the door is closed by the free end of the spring plate coming against the door post. In another arrangement this spring plate is dispensed with and the stop is formed on the "neck" of the lock. The neck is prolonged by a tail acted on by a lever which comes against the post when the door is closed. The catch bolt is held by a spur which is the stop of the locking bolt, and which, attached at the end of the neck, acts on a shoulder in the frame of the catch bolt. When the door is closed the pressure of the post against one arm of the lever releases the other arm from the tail of the neck; the neck rises and the spur no longer opposes the movement of the catch bolt, which is then forced out by its spring.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 14.—N° 3797.

MURPHY, William Jeremiah.—"Improvements in the construction and working of ordnance."

This invention relates to improvements upon an invention for which Letters Patent were granted to me, bearing date 11th December 1865, No. 3197, and which consisted principally in the employment or adaptation of hydraulic pressure to the working of breech-loading guns, and consists in various improvements in the working details of the gun and its applianees, whereby its efficiency is greatly increased, and the improvements are also made applicable to muzzle-loading guns.

In the first place I still propose to use the hydraulic breech and piston substantially as described in the Specification of my former Patent above referred to, but I add an air vessel to the hydraulic cylinder in order to impart an amount of elasticity to the resistance of the water, and so lessen the effect of the recoil.

Secondly, I propose to fire the piece whilst the projectile, cartridge, piston, and water, as well as the air in front of the projectile, are in forward motion.

Thirdly, in some cases (in cold countries for instance) I propose to use the water from a boiler to act on the piston or plunger, the pressure of the steam above the water supplying the requisite power, and by its elasticity dispensing with the necessity for an air vessel.

Fourthly, I propose to mount the gun on a frame or carriage which is always kept horizontal. This I propose to effect by means of a hanging weight which, as the vessel rolls or pitches, swings in the opposite direction, and acts upon eccentrics and levers which raise or lower the gear carriage, and thus keeps it always horizontal.

Fifthly, I propose to overcome the recoil of the gun by a modification of the hydraulic break, for which Letters Patent were granted to me, dated 12th September, A.D. 1865, No. 2337, by using a perforated piston enclosed in a cylinder.

Sixthly, I also propose for guns mounted "en barbette" to raise the gun into the firing position by means of hydraulic pressure, and to lower it for loading by allowing the water to escape from the cylinder; and I protect the artillerymen and the guns when mounted in this fashion by means of strong wrought-iron plates rolled and bent to a rounded acute angle, placed with their two edges resting on the ground or masonry, and their rounded angle uppermost and filled inside with earth or puddle.

[Printed 1*s*. 4*d*. Drawings.]

A.D. 1868, December 14.—N° 3798.

THOMAS, Jenkin.—"An improved tea kettle."

In constructing a teakettle according to my invention the upper part may be formed and provided with a handle and spout in the ordinary manner. Through the body of the kettle and leading in an inclined direction from the bottom to the upper part of the same I introduce a taper or funnel-shaped tube, the said tube being preferably inclined backward from the bottom of the teakettle and extended slightly beyond it, behind the lid. The said tube is made of such a width at the bottom of the kettle that a large surface is exposed to the heat of a fire, while the narrow or contracted upper end of the said tube retards the passage of the heat through the same and insure its full effect upon the contents of the kettle.

[Printed, 1*s*. Drawings.]

A.D. 1868, December 14.—N° 3799.

HAY, Lord John.—"Improvements in engine counters, parts of which improvements are applicable to " other useful purposes."

This invention relates to improvements in the self acting registering and numbering apparatus patented

A.D. 1868, December 14.—N° 3800.

LYNCH, Thomas.—" A new or improved system for preventing collisions on railways."
This invention consists in actuating railway brakes through the medium of an interver
between the carriages and the locomotive engine, the latter of which being of double actic
alike.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 15.—N° 3801.

WATT, Alexander.—(*Provisional protection only.*)—" Improvements in the manufa
" rollers or cylinders for printing purposes, which improvements are also applicable to al
" used for printing purposes."

The improvements consist in cleansing the metallic surfaces with cyanide of potassium,
copper by immersion in a solution of cyanide of potassium mixed with a solution of cyar
mixed with a solution of sulphate of copper, or mixed with a solution of nitrate of cop
coppering by the battery.

And leaving on the surfaces a sufficient thickness of deposited copper for the depth of tl
the said surfaces have been smoothed and polished for engraving.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 15.—N° 3802.

BROWN, John Harcourt.—(*Provisional protection only.*)—" Improvements in the
" helmets, hats, caps, and similar articles, and in the apparatus and arrangement thereo
" said manufacture."

This invention consists generally in the manufacture of helmets, hats, caps, and s
described in the accompanying Specification, but more especially the formation thereof fr
matters or leather alone, or in combination with other suitable fibrous materials prepared
also the form and construction of the metal or other moulds or cases, together with the g
and arrangements and the moveable covers or felts used in the said manufacture of the s
caps, and other similar articles.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 15.—N° 3803.

MATHER, Colin.—(*A communication from Charles Grandison Sargent.*)—(*Provisional* p
" Improvements in machinery for ginning, burring, and cleaning cotton and other fibrous
This invention consists in the application of a stationary plate or bar between the fin
and the revolving fluted guard of machinery for ginning, burring, and cleaning cotton
substances ; also making the fine toothed cylinders with a copper binding wire between t

A.D. 1868, December 15.—N° 3805.

WILLIAMSON, HENRY.—" Improvements in the manufacture of felt and other hats."

The features of novelty in this invention consist in lining hats without stitching, in making them reversible as described, and stitching the band on the outside and the leather inside the crown by sewing machinery in the manner described.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 15.—N° 3806.

BAUMANN, ALEXANDER.—" Improvements in pressure-governed slide valves."

The valve of the engine is actuated by connecting it to a special piston working in a special cylinder. The admission of pressure to and the exhaust of the latter are governed by the combined effects of a second and third slide valve, the second slide valve being the piston itself, and the third being actuated by a special piston working in a special cylinder having pressure and exhaust in common with the cylinder of the engine through ordinary steam-ways.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 15.—N° 3807.

GARDEN, ROBERT SPRING.—(*Provisional protection only.*)—" An improved portable cartridge pouch " or box."

The invention consists in adapting and fitting loosely in the interior of a cartridge pouch or box two rows of cells or receptacles for the cartridges (capable of being readily moved in and out of the pouch or box) made of metal or other suitable material, one row being over the other, and is so attached to the other at each end by a connecting piece or pieces of metal or other suitable material that when the cartridges in the top row have been used the lower row of cells or receptacles fitted with cartridges can readily be moved up into its place, the action of moving one row into the place of the other being something similar to the action of a parallel ruler, and in order to provide or allow for any inequalities in the sizes of the cartridges, or for different sizes or makes, suitable slots or grooves may be formed in the metal or other connecting pieces so that one row may be easily moved over the other without impinging on the cartridges.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 15.—N° 3808.

BYWATER, WILLIAM.—" Improvements in apparatus employed in the manufacture of felt."

The invention relates to an improved mode of working the top roller of hardening machines employed in the manufacture of felt by the application of endway motion thereto by eccentrics applied at each end thereof.

Also the invention relates to syphoning the water out of the steam heated rollers by means of copper tubes and channels fixed to the inside of copper rollers and into the axle of the copper heated roller.

And also the improvements relate to connecting the crank or doffing motion of a carding engine with the shaft of the fancy direct by means of eccentrics, cams, or tumblers to the rocking shaft and levers.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 15.—N° 3809.

CHILCOT, JAMES WILLIAM.—(*Provisional protection only.*)—" Improvements in the construction of " stays or corsets."

These improvements consist in the employment of metal eyelets inserted in the seams, or bones, or in both, whereby the seams and bones are materially strengthened, and the stitches are prevented from breaking away.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 15.—N° 3810.

POCOCK, CHARLES ASHWELL BOTELAR.—(*Provisional protection only.*)—" Improvements in the construction of bedsteads and leg rests for railway carriages."

This Provisional Specification describes making the frames of bedsteads of tubes or round rods, also a mode of jointing the head, rails, and legs to the frame so that they can fold up; also modes of fixing the sacking: also making the tubular frames telescopic, so that they may pack up in a small space; also modes of fitting up temporary beds and leg rests in railway carriages; also a mode of constructing a folding bedstead so as to form a portmanteau, dressing case, tent, and boat.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 15.—N° 3812.

LOCKHART, Miles.—" Improved means or apparatus for ventilating, chiefly applicable to

This consists in leading a pipe down the chimney; this pipe is turned up at its lower terminates in a box or series of tubes, or holes are formed in a corrugated plate or otherwise, su or plate being situated above the stove or elsewhere at the chimney bottom. The top of the little above the chimney and carries a horizontal cup fitted with a vane, which always keeps th the cup to the wind. A portion of the pipe is free to revolve with the cup and carries a guar which is always kept to the wind.

The invention also applies to mine shafts, tunnels, &c.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 15.—N° 3813.

BROWN-WESTHEAD, Marcus, and **SMITH**, Robert.—" Improvements applicable " bobbins upon which thread or twine is wound for sewing and other purposes."

This invention consists in applying a drag to the thread or twine on bobbins or spools.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 15.—N° 3814.

FRAZER, Joseph, and **NAAR**, William.—" Improvements in the construction of mattres " beds."

A spring mattress capable of vertical contraction by straps, and fitted when required with l bedstead.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 15.—N° 3815.

KOTZÓ, Paul.—" Improvements in steam engines."

Steam from the cylinder passes through rotary valves into a chamber below, into which jets are thrown. The condensed steam and water are forced by the steam at the end of the stroke valves into another chamber, from whence the condensation water is drawn off in any convenie

[Printed, 10*d*. Drawing.]

A.D. 1868, December 15.—N° 3816.

WILSON, Thomas.—(*Provisional protection only.*)—" Improvements in couplings for connec " signalling on railway trains, and for other purposes."

In coupling the signalling tubes on railway trains according to this invention an air chest fixed on each end of each carriage, the ends of the signalling tube running along the top o opening into the said chests or chambers. In the front of each chamber are two openings, on by a spring valve and the other having connected to it a flexible coupling tube provided with a

A.D. 1868, December 15.—N° 3817.

GRICE, James Thomas.—" Improvements in machinery for ornamenting metallic tubes and rods."

This invention relates to machinery for ornamenting tubes and rods, consisting of a series of ornamental rolls so arranged that their peripheries meet near the centre of a circle and enclose a space through which the tube or rod is passed. The peripheries of the rolls where they meet one another form longitudinal and parallel lines on the tube or rod, which lines form a portion of the pattern or design impressed on the tube or rod. This invention has for its object to produce patterns or designs on tubes or rods without any of the longitudinal lines described. This is effected by making the sides of the rolls of a zig zag or other figure, which will accord with the pattern or design to be impressed on the tube or rod. By the operation of the rolls the line produced at the junctions of the rolls follows the lozenge or other shaped pattern or design to be formed on the tube or rod instead of forming a straight line as usual.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 15.—N° 3818.

SCRIVEN, John Enraght.—(*Provisional protection only.*)—" Improvements in apparatus for heating " the air in chambers, apartments, or buildings, and for heating water, which apparatus is applicable for " Turkish baths and other purposes."

According to this invention, which relates to that class of apparatus in which the furnace or fire box is composed of a series of iron rings or short vertical casings, the base plate is formed with a ledge around it so that its central portion rises somewhat within the lower ring or vertical casing, the bottom of which rests upon the aforesaid ledge of the base plate. The lower ring or casing, which is provided with an adjustable door or doors, constitutes the sides of the ash pit, and is formed at its upper edge with a broad rim or shelf having a small vertical ledge running around its outer edge. This rim or shelf receives and supports the fire bars, as also a second ring or vertical casing, whose lower edge rests upon the broad rim or shelf of the ash pit casing in the space between the fire bars and the small vertical outer ledge. This ring or vertical casing is formed with a small hopper-shaped opening having an adjustable door for stoking and admitting air in regulated quantities. The upper edge of the ring or vertical casing last mentioned is formed with a groove or channel for receiving the lower edge of another ring or casing, and so on, the upper edge of each ring or casing being formed with a like groove or recess to receive the lower edge of the next higher ring or casing. In this way perfectly air-tight joints are formed as the interstice left between the lower edge of each ring or casing, and the groove in which it fits becomes rapidly filled with ashes and thus the joint is made good. The upper ring or casing is formed with a hopper-shaped opening (having an adjustable door) for feeding fuel and admitting air in regulated quantities.

The crown plate of the furnace or fire box is formed with a ledge or projection which fits into the groove or channel formed around the upper edge of the top ring or vertical casing in the same manner that the lower edge of each ring or casing fits into the groove or channel of the next lower ring. The crown plate receives and supports a series of vertical flue tubes which conduct the products of combustion into a smoke box supported on the upper ends of the tubes. The top of the smoke box is covered by a plate having a ledge or projection which fits into a groove or channel formed around the upper edge of the smoke box. Within the smoke box is a small heating vessel or boiler communicating through suitable circulating pipes or tubes with a cistern or reservoir of water to be heated, so that the cooler water may flow into the small heating vessel or boiler through the one pipe or tube and return to the cistern or reservoir through the other. The small heating vessel or boiler is provided with pendant circulating boiler tubes, preferring those well known as the " Field " patent boiler tubes ; and such tubes are arranged so that they may hang down into the vertical flues leading from the furnace to the smoke box. The vertical flue tubes are provided with dampers for regulating the course of the products of combustion, so that when it is desirable to heat the water rapidly the products of combustion may be caused to come more especially in contact with the pendant tubes and boiler, and vice versa; when it is desired to heat the water slowly the products of combustion may be diverted accordingly.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 16.—N° 3819.

MILL, John.—(*Provisional protection only.*)—" An improved method of heating press plates."

This invention consists of an apparatus of rectangular form composed of perforated pipes (fitted to dyers' screw-presses) for heating press-plates through the medium of ignited jets of gas.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 16.—N° 3820.

COTTON, WILLIAM, and ATTENBOROUGH, EDWARD.—" Improvements in apparatus for the manu-" facture of looped fabrics."

The improvements relate to tightening the threads in their passage to the thread carriers by spring arms capable of regulation when the thread carriers are at the end of their traverse, and the loops are being divided, and the relief of such pressure at other times.

Also the improvements relate to giving extra motion to the slides for operating the fashioning apparatus, so as to give extra motion to the fashioning instruments when shifting the loops for widening, and in relieving such strain in narrowing.

Also the improvements relate to the use of extra instruments to take loops of the work back on to empty needles to be looped in for filling up the holes otherwise left in the process of widening.

Also the improvements relate to forming each of the thread carriers elastic.

Also the improvements relate to obtaining uniformity of tension to the threads to the thread carriers, whether producing ordinary fabric or " widening " or " narrowing."

Also the improvements relate to obtaining capability of adjustment of the movement of the needles in relation to the sinkers, so as to vary the stiffness of the work during manufacture.

Also the improvements relate to forming the slur cock carriage and the jacks so that the jacks may be withdrawn from the sinkers as soon as they have given the requisite motion to them.

Also the improvements relate to the controlling the movement of the thread carriers at the termination of their traverse, so as to insure the thread therefrom being taken between the desired sinkers.

[Printed, 6*s*. 6*d*. Drawings.]

A.D. 1868, December 16.—N° 3821.

NICHOLSON, WILLIAM NEWZAM.—" An improved portable mangle."

My invention consists of two rollers geared together with toothed wheels having a winch handle to actuate the same without any intermediate wheels.

The bearings of the lower roller are sunk in horizontal stretchers or rails of wood on each side of and at right angles to the rollers, which stretchers are connected by flat pieces of wood on each side of the roller, the said flat pieces acting as folding boards. Immediately over these stretchers are two similar pieces, in which the bearings of the upper roller are sunk, and they are secured to the lower stretchers by screws having fly nuts or analogous contrivance so as to be readily adjusted to give the necessary pressure on the rollers, it being essential to my invention that the stretchers shall have the property of springs, and act both for that purpose and as a portion of the framework of the mangle.

One or both the rollers may be made of metal so as to be heated on a laundry stove when it is wished to give a better surface to the clothes operated on.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 16.—N° 3822.

VÉREL, WILLIAM ARISTIDES, and CAMERON, JOHN.—(*Provisional protection only.*)—" Improvements " relating to the precipitation of copper and other metals from solutions by iron, and to their extraction " from slag or scoria."

The first part of the invention consists in reducing the per-salts of iron in solutions containing salts of copper and other metals to proto-salts by treating the solutions with sulphurous acid.

The second part of the invention consists in utilising the residuary liquor, from which copper or other metals have been precipitated by exposing it in a tower or otherwise so as to absorb oxygen from the atmosphere to convert the proto-salts into per-salts; which last may be advantageously used for dissolving out copper and other metals from slag or scoria containing them.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 16.—N° 3823.

HOLLINGWORTH, OLLIVE.—(*Provisional protection only.*)—" An improved combined open and closed " carriage."

Constructing a carriage which may be used either as a park phaeton or closed with a hood to resemble a miniature brougham. The driving box and dickey being made moveable and reversible.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 16.—N° 3824.

EVERARD, John Breedon.—(*Provisional protection only.*)—" Improvements in machines for drilling or " boring rocks."

This invention consists in improvements in the construction of drilling machines belonging to the class known as "jumpers." The machine consists of a cylinder with its valve-chest, valve, piston, piston-rod, guides, and slides mounted on a metal inner ring, pivots being fastened on opposite sides thereof, which work into bearings adjustable upon an outer ring, so that the cylinder may be inclined in any direction. Three metallic legs are fastened to the outer ring, such legs being made in two parts, one part sliding over the other, and adjustable by bolts or sliding clips. The drill is keyed to the lower end of a screw shaft which passes through the hollow piston rod, which is similarly tapped, thus allowing of the drill being adjusted. The drill is operated by the action of the piston, and its rotary motion is produced by means of a toothed wheel and suitable springs. In order to fix the machine for work, three holes are drilled round the site of the proposed blast hole, a lewis or other bolt being inserted in each, and the machine is placed in the required position, and chains or ropes are stretched from the bolts to lugs fastened on the outer ring. The chains or ropes are then tightened by suitable means.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 16.—N° 3825.

FIDLER, Thomas Claxton.—" Improvements in the rolling stock of railways and tramways, also in " traction engines and other vehicles."

The feature of novelty which constitutes this invention is the arrangement of rolling stock of railways and tramways in traction engines and other vehicles, the object being to enable sharp curves to be traversed with ease and safety, and to enable engines and carriages of longer wheel base to be employed on curves of ordinary radius, to avoid the lateral slipping of wheels and the sinuous oscillations of engines and carriages, and the consequent wear and tear and destruction of rolling stock and permanent way, and the great increase of resistance on curves.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, December 16.—N° 3826.

DESENS, Louis.—(*Provisional protection only.*)—" Improvements in miners' lamps."

This invention is an improvement on a former Patent, N° 2891 of the the 19th September 1868, the whole of the mechanism therein described being closed in by the platform, a circular aperture being made in its centre for the admission of the burner, which is mounted on a circular plate, and screws into position by means of two small steel projections thereto attached, a check being arranged inside the aperture, the largest of these projections on coming in contact with a boss of a spring, forces the latter backwards, allowing the projection on the plate of the burner to pass when the whole is closed in.

It is by means of the detent mentioned in the former Patent that the opening and closing of the central aperture is effected; this detent is slightly elongated so as to pass through a slot in the platform, and by pressing it outwards to the left with the thumb, the small horizontal shaft at its extremity (Patent 2891) is brought to bear against the boss on the spring before alluded to, and forcing it backwards the projection on the plate of the burner is freed, and then by turning the piece it is readily removed either for re-adjusting the wick or re-filling the lamp with oil.

The object of the present invention is an additional safeguard against exposing the flame, as without a knowledge of the secret lock it is impossible to open the lamp.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 16.—N° 3827.

WAPPENSTEIN, Rudolph, and RAY, Richard.—(*Provisional protection only.*)—" An improved " system and apparatus for registering the number of passengers travelling in or on omnibuses and other " conveyances."

This invention consists in arranging in any convenient position meters operated by levers and toothed wheels in such manner that the number of persons entering and leaving the conveyance may be accurately determined.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 16.—N° 3828.

CLARK, Alexander Melville.—(*A communication from Hugues Antoine Paul Christofle and Charles Henri Bouilhet.*)—" Improved processes for inlaying metals."

I inlay vases and other articles in bronze, copper, and other metal or alloy of a different color to gold or silver as follows :—I paint a design in gouache color on the article and then fill in the spaces around the design with a varnish, such as used by engravers. Thus prepared, the article is placed in a bath of acetic acid communicating with a battery. The gouache color dissolves and the metal becomes attached, forming channels corresponding with the design. The article next passes into a weak bath of cyanide of silver or gold in connection with a battery for receiving a deposit in the channels. The varnish is then removed and the article polished and afterwards bronzed.

Instead of the design being produced by hand, transferring processes such as used in decorating porcelain may be employed.

I may also trace the design in a reserve varnish or ink insoluble in salts of iron, and then place the article in a bath of iron which deposits at all parts not covered by the varnish, the latter being then removed. In this condition the article is placed in a bath of cyanide in connection with a battery for biting in the design, the iron being inattackable. The article is next placed in an alkaline bath of gold, silver, or alloys for receiving a deposit in the channels as before. The iron being afterwards dissolved by means of sulphuric acid.

The patterns so produced may be reproduced by galvanoplasty, the channels receiving afterwards the electrochemical deposit.

Wax may also be used to protect the channels before placing the articles in the bath of iron as before described.

The invention is also applicable to jewellery.

[Printed, 6*d*. No Drawings.]

A.D. 1868, December 16.—N° 3829.

WORRALL, James, and KERSHAW, John.—" Improvements in drying stoves, and in machinery to be " used therewith."

The cloth while hanging in laps in the stove is agitated by mechanical means, and the laps are formed by the aid of automatic apparatus, thus avoiding the exposure of workmen to the heat of the stove.

[Printed, 2*s*. 6*d*. Drawings.]

A.D. 1868, December 16.—N° 3830.

AVELING, Thomas.—" An improved arrangement of machinery to be employed in steam cultivation."

To avoid vibration and to economise power I propose to construct the engines in pairs or as counterparts the one of the other, so that two engines when placed opposite each other in the field will both drive (as well as draw) from the land side.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 16.—N° 3831.

RYLAND, Frederick. — " Improvements in the manufacture of metallic lids for saucepans and other " articles of hollow-ware, and in machinery or apparatus to be employed in the said manufacture."

This invention consists in making the said lids out of one piece of sheet metal, in the following manner. A shallow cylindrical cup is first made, and by pressure a flange or hollow ring is formed near its bottom, which after being flattened constitutes the edge of the lid. The open end of the cup above the flange forms the rim of the lid, and the bottom of the cup the top of the lid. The flange or hollow ring is made by machinery or apparatus consisting of a plunger working over a die on the bed of a press. A collar or ring slides on the plunger, the said ring having an internal shoulder, there being an annular space between the collar and plunger below the said shoulder. The cup being put on the lower die, the plunger descends and fills up and internally supports the said cup, the collar or ring next descends upon the plunger and over the upper part of the cup, which it supports externally. By the further descent of the collar its shoulder comes upon the edge or top of the cup and forces down the said cup, the lower unsupported part of the cup is thereby expanded, and the hollow flange before referred to formed, which flange is flattened and its shape perfected by being compressed between the sliding collar and die on the bed of the press.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, December 16.—N° 3832.

LISTER, Samuel Cunliffe.—(*Letters Patent void for want of Final Specification.*)—" Improvements in " steam boilers."

This Provisional Specification describes various improvements in the mode of constructing the double air pipes which have been used for introducing air into a furnace, the main object being to avoid the evils arising from the unequal expansion and contraction of the inner and outer tubes. It also describes a mode of distributing the orifices in such tubes.

[Printed, *4d.* No Drawings.]

A.D. 1868, December 16.—N° 3833.

RITCHIE, George.—"Improvements in compositions suitable for being applied to woven fabrics and " other surfaces."

This Provisional Specification describes mixing flock with india rubber cement, and sometimes with varnish or gum, and applying the same to a surface of calico. The flock and the rubber cement may be colored.

[Printed, *4d.* No Drawings.]

A.D. 1868, December 16.—N° 3834.

LISTER, Samuel Cunliffe.—"Improvements in preparing wool, flax, and china grass, and in combing " cotton, wool, flax, and china grass."

This Provisional Specification describes preparing wool, flax, and china grass for combing or carding by means of an intersecting screw gill in which the gill teeth strike into the fibre in opposite directions.

Also the employment for combing cotton, wool, flax, and china grass of machinery such as described in Patent No. $\frac{2832}{1859}$, only with round wire cards made very fine.

Also substituting combs in place of cards in said machines.

[Printed, *6d.* Drawing.]

A.D. 1868, December 17.—N° 3835.

HALL, James Turner, CRITCHLEY, George, and FOX, Howard Busby.—(*Provisional protection only.*)—"An improved self-acting rack or catch, with or without hinge."

The object of our invention is to hold firmly at any angle of inclination, a box or trunk lid, pianoforte top, door, or any article where a hinge is used, which will remain as placed, and is self acting when closing. Our invention consists in attaching to a hinge or to any article where a hinge is required a racked segment of a circle, a fixed piece for a bearing, a peculiar shaped piece which holds the rack fast, a spring or lever to act upon the said peculiar shaped piece, and the combination of the whole or part of these for the purpose set forth.

[Printed. *4d.* No Drawings.]

A.D. 1868, December 17.—N° 3836.

THORNILEY, Joshua, and WING, George Bliss.—(*Provisional protection only.*)—"An improved " process of restoring or renewing worn-out files."

This invention consists in first washing the files in a solution of warm water and potass; then in placing them in a wooden box and covering them with warm soft water and adding thereto certain quantities of borax, blue vitriol, sulphuric acid, and pure wine vinegar, after which they will be ready for use.

[Printed, *4d.* No Drawings.]

A.D. 1868, December 17.—N° 3837.

HADFIELD, George.—"Improvements in the manufacture of varnish."

This invention consists,—

Firstly. In submitting varnish to the action of ozone; and,

Secondly. In using about double the amount of spirit usually employed, and after distillation drawing off the superfluous spirit.

[Printed, *4d.* No Drawings.]

A.D. 1868, December 17.—N° 3838.

ROBERT-THEURER, Fritz.—"Improvements in apparatus for winding and setting the hands of " watches."

This consists of mechanism for winding and for setting the hands. The bow has a to and fro movement imparted to it, and an arm let into the bow and pivoted at the centre of the watch transmits this movement to pauls taking into a ratchet wheel on the barrel arbor; the winding is thus effected. The arm carries a wheel in gear with a wheel on the central spindle, but in the to and fro movement of the arm the wheels do not rotate unless a pin is caused to take into the wheel on the arm; when, however, the pin is in gear, the wheels rotate in the to and fro movement and shift the hands. The pin is carried by a lever moved by a finger piece outside the case.

[Printed, *8d.* Drawing.]

A.D. 1868, December 17.—N° 3839.

PERRY, Arthur.—(*Provisional protection only.*)—" Improvements in lighting or illuminating stained, " painted, or colored windows."

This invention has for its object to throw or reflect artificial light on to the exterior parts of stained, painted, or colored windows of cathedrals, churches, and other buildings, so that the interior may be illuminated and the beauties of such windows seen from the interior by night.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 17.—N° 3840.

LENNOX, William Henry, PEARMAN, John William, and PEARMAN, William James.— —(*Provisional protection only.*)—" Improvements in the apparatus used in the production of surfaces for " printing music."

According to this invention stereotype plates are produced from metal plates on which music is embossed with its symbols, bars, and notes, as well as with words, and from ordinary engraved plates.

The object is to dispense with engraved plates, type, and lithography in the process of printing. The stereotypes may be formed of any suitable materials, such as ebonite, gutta percha, or other plastic substances, or metal.

A metal plate is to be embossed or stamped with symbols of music reading the right way, from which a reversed stereotype is taken with a raised surface, and printed impressions are then easily obtained.

The ordinary engraved plates, which read the wrong way, are treated with a coating of plaster of Paris or other plastic material, which is removed when set and placed (face downwards) on a plane surface, to which it is made to adhere. The back of the cast is then ground or cut down until the impressions are exposed as raised surfaces, from which a sunken cast is obtained reading the right way, and from this the final reversed raised surface of stereotype (which reads the wrong way) is taken ready for printing.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 17.—N° 3841.

MANNERS, William. — (*Provisional protection only.*) — "An irreversible passenger's railway danger " signal."

A pulley in form somewhat resembling a dolly peg is placed in a flanged socket and let through the top of a railway carriage into each compartment as required. A rope, chain, or equivalent contrivance may pass through the pulley to engine driver and to guard, or to driver only, and be attached to a bell or other alarm signal. The signal pulleys are on a shaft passing through a socket in or near the top of the carriage. A handle is screwed on this shaft inside. When this handle is moved it becomes impossible for the passenger to restore it to position, but it remains as moved to indicate the carriage, and gives the alarm to guard and driver. It can be restored to place by the person in charge of the train. A contrivance is added to throw up a flag or other indicator when the signal pulley is moved.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 17.—N° 3842.

BENSON, George Henry, and VALENTIN, William George. — (*Provisional protection only.*) — " Improvements in the manufacture of iron and steel, and in the apparatus employed therein."

The furnace is heated by a combination of highly heated combustible gases and a blast of heated air introduced and maintained therein under pressure so as to prevent the ingress of the external air through any of the doors, cracks, crevices, or other openings in the furnace.

The furnace used consists mainly of a hearth or basin nearest to the side from which the flame from the combustible gases enters the furnace for the melting down of the pig iron, and of one or two hearths or chambers on the side where the flame passes out of the furnace for heating the scrap wrought iron or other suitable wrought iron mixed with the pig or cast iron that is melted in the body of the furnace.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 17.—N° 3843.

BENSON, George Henry, and VALENTIN, William George.—" Improvements in the generation " or production of combustible gases, and in the apparatus employed therein."

The furnace or gas generator is made with sides inclined inwards at their lower part at an angle of about 45°, and formed of iron boxes, which can be kept full of water. A blast plays on the ignited fuel from several tuyeres formed in the water boxes.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, December 17.—N° 3844.

INGLIS, THOMAS, and ENGLISH, THOMAS.—(*Provisional protection only.*)—" Improvements in the " construction of tubes or cylinders capable of resisting great internal pressure."

Helical coils connected together or with a common internal tube by screw threads cut thereon, which serve to compress the coils and form tight joints.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 17.—N° 3845.

KNEVITT, FREDERICK HARTT, and HAZARD, HENRY HERBERT.—" Improvements in shutters and " blinds for windows, doorways, and other apertures, and in the means for adjusting the same."

Our improvements relate to shutters and blinds, which are composed of a number of parallel laths or slats jointed together, and which may be coiled upon a roller or otherwise raised or lowered to open or close the window, doorway, or other aperture. The laths or slats are provided at one or both ends with two pins or projections. Each of these two pins or projections works in one part of a compound or double groove in the frame. The distance between the two parts of the said groove is increased or diminished as desired, and the slats or laths are thereby opened or closed.

[Printed, 1*s*. 8*d*. Drawings.]

A.D. 1868, December 17.—N° 3846.

WALKER, JOHN CRAWFORD.—(*Provisional protection only.*)—" The production of an acid powder and " the use thereof in combination with an alkaline carbonate in the treatment of flour employed in the " manufacture of bread and other farinaceous food."

The novelty of this invention consists in producing an acid powder by diluting hydrochloric acid with water and then mixing it with any farinaceous or amylaceous substance; and further in mixing such said acid powder with the flour of commerce, and after a few hours mixing with the flour thus treated carbonate of soda: this is to be made into dough and employed in the mnnufacture of bread, and by the use of flour thus treated ferment is dispensed with.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 17.—N° 3847.

HALLIMOND, ROBERT.—" An improved lubricator, specially adapted for coal and other tubs used in " mining operations."

The novelty of this invention consists in adapting to the sides of a tub used in mining operations an arrangement for lubricating the axles or bearings of the wheels on which such said tub runs, so that each time the said tub comes to " bank " a few drops of oil shall fall on to the bearings of the axles, the vessel being so arranged and constructed that the oil can only escape from the vessel containing it when the tub is in use or at work.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 17.—N° 3848.

QUICK, JOSEPH, the younger, and SAMPSON, JOHN.—" Improvements in the construction of pistons."

This invention consists in a peculiar combination of devices whereby the ring or rings of the piston is or are caused to press constantly against the inner surface of the cylinder with a force which shall vary in proportion to the extent of variation between the pressures on the respective sides of the piston, the packing being so adjusted as to form a good but not unnecessarily tight joint at a minimum pressure, to force the piston ring or rings more and more tightly against the inner surface of the cylinder as the pressure upon the side of the piston increases, and to correspondingly reduce the force with which the ring or rings so presses or press against the cylinder, in proportion as the pressure against the piston's side diminishes. According to this invention the block or body of the piston is formed with small holes or passages, the number of which may be varied to suit the size of the piston, and these small holes or passages are fitted with corresponding small pistons properly packed and capable of moving therein when influenced by any excess of pressure at one side of the piston over that at the other side. The apparatus is so arranged that in the normal position of these small pistons, that is, when there is an equal pressure on both sides of the main piston, the latter will lie perfectly easy within the cylinder, but that any change in pressure on the respective sides of the piston will cause the small pistons to move endwise within their respective holes or passages in the block or body of the main piston, and such movement of the small pistons will be communicated from them through the cap top plate or junk ring of the main piston, or through suitable feathers, T pieces, or equivalent devices to the packing ring or rings, so as to force the latter against the inner surface of the cylinder.

In some cases the junk ring may be fixed, in others the moveable junk ring may be used in combination with the feathers, T pieces, or equivalent devices.

In some instances india-rubber or other packing may be interposed between the top plate, cap, or junk ring and the packing ring or rings.

[Printed, 2*s.* 6*d.* Drawings.]

A.D. 1868, December 17.—N° 3849.

POUNCY, John.—"Improvements in the production of plain or coloured photographic and other "pictures."

This invention relates to an improved method of producing and colouring photographic and other pictures, and refers—

1st. To producing a picture in carbon pigment or other material, mixed or prepared in oil, spirit, or water or similar solution, made sensitive according to Mr. Pouncy's Provisional Specification, No. 780, A.D. 1858, and the Specification of his Patent No. 267, A.D. 1863.

(2nd.) To applying the colouring matter upon the picture on the reverse or obverse side before transferring the same to the canvas.

(3rd.) Monochrome pictures not required to be transferred are to be printed on a transparent material, paper, silk, or other surface, and if to be finished in the same material the medium of transparency is to be removed, leaving the picture to appear on the material in its original purity, and the picture becomes part of the paper or fabric itself. 4. Pictures may be taken direct on to the transparent material and allowed to remain thereon.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 18.—N° 3850.

LIEBERMANN, Charles, and GRAEBE, Charles.—"Improvements in preparing coloring matters."

This invention consists in preparing coloring matters for dyeing and printing by treating anthacene with bichromate of potassium and sulphuric or acetic acid or nitric acid. The anthrachinon thus obtained is mixed with bromine, by which bibromanthrachinon is generated. This substance is then treated with a concentrated solution of caustic potass, and the coloring matters are precipitated.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 18.—N° 3851.

HUGHES, Edward Thomas.—(*A communication from Adrien Huet.*)—(*Provisional protection only.*)—"Improvements in means and apparatus for reducing the friction and assisting the flotation of vessels when "passing through the water."

This invention consists in arranging rotating cylindrical or other suitably shaped bodies beneath and partially above the water line of such vessels, so as to change the skin friction into the friction of rotation.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 18.—N° 3852.

HUGHES, Edward Thomas.—(*A communication from George Jones.*)—(*Provisicnal protection only.*)—"Improvements in tea and coffee urns and other similar vessels."

This invention consists in the arrangement of a water chamber and flange of the cover in connection with the body of an urn without communication from the chamber to the urn below.

[Printed, 6*d.* Drawing.]

A.D. 1868, December 18.—N° 3853.

BRIERLEY, John Winterbottom.—"Improvements in machinery or apparatus for forging nuts."

This invention consists of a machine which, by the simple movement to and fro of a headstock upon a slide or bed, shapes, flattens, punches, and cuts off the nuts from a heated bar and delivers them sufficiently hot for the workman to finish them with a few strokes of the hammer on a swage of suitable form attached to the anvil.

The machine consists mainly of three parts, vizt., a bed or slide, a fixed headstock, and a moving headstock. The latter slides to and fro on the bed, and is actuated by means of an excentric, cam, or crank on the main driving shaft, which revolves with a slow motion. Attached to the sliding headstock are three tools, and to the fixed headstock are attached the three counterparts. The first is a die or swage which indents the sides of the heated bar so as to form four sides of a hexagonal nut. The second is a pair of squeezers or flatteners for pressing the top and bottom of the nut so as to bring it to the required thickness, and the third is a compound tool which punches out the centre and at the same time cuts off the nut.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 18.—N° 3854.

THOMAS, William Frederick.—" Improvements in sewing machines."

One part of this invention relates to Clark's Patent, No. 1798, of 1867. One of the present improvements consists in arranging the needle and awl upon opposite sides of the material to be acted upon instead of on the same side. Another improvement consists in arranging the needle and awl on the same side of the material and carrying them by a slide or slides receiving lateral motion, so as to bring them alternately over the same place. Or the needle and awl are carried by a plate fixed to a spindle having reciprocating rotary motion, so as to bring the awl and needle consecutively over the same place. Another improvement consists in causing the awl, while perforating the material, to move laterally so as to feed it forward. Another improvement consists in holding the presser down against the thrust or pull of the awl or needle by an arm or cam, &c., caused to act on the presser, or by an additional spring, or by producing an intermittent action of the ordinary spring.

Another part of the invention consists in substituting the shuttle and parts connected therewith, described in the before mentioned Patent, for the shuttle and parts connected therewith, described in Brooke's Specification, No. 1634, of 1864.

Another part of the invention consists in sewing straw plait by a curved needle, so arranged as to pass in a curved path first through the one piece of material into the other piece, and then again through the first piece, so as to prevent the thread from shewing to any extent in the upper surface of the one piece of straw plait.

[Printed, 1*s*. 10*d*. Drawings.]

A.D. 1868, December 18.—N° 3855.

HODGSON, John, BOTTOMLEY, Henry, and COCKROFT, Ezra.—" Improvements in apparatus " employed in weaving."

The invention relates to giving motion to rotary shuttle boxes, so that the selection of shuttles therefrom may be varied with a miss or skip of one or more shuttle chambers when desired, by pins of various lengths operated by jacquard or pattern surface applied either directly to rods or to levers acting on such rods, so that these rods may be actuated to bring noses or projections thereon into correct position in relation to a lifting lever, and through levers and claukers give the desired motion to the boxes to the extent and in the order desired.

In place of these projections of various lengths levers may be used operated by harness cords attached to them at distances varying from the axis of their motion, or the noses or projections are brought into position by steps on a swing lever acting on studs on the bottom levers.

The effect may be obtained by a chain passing over a wheel on the box, the links being in part covered by moveable covers.

The improvements also relate to means for actuating vibratory shuttle boxes for pick and pick motion, and to operating the picking for such purpose by applying such boxes directly on the ends of a shaft on which are affixed arms connected by rods to levers operated by eccentrics or tappets, and the use therewith of projections on the sides of such eccentrics or tappets, or such like means, to operate a sliding rod for moving the picking cams into or out of position for action on the picking cones or arms.

The shaft in place of being connected to the boxes may operate them by suitable gear, and the use of such shaft may be applied to rotary shuttle boxes by the arms being caused to operate them through clicks or drivers and ratchet wheels.

[Printed, 2*s*. 10*d*. Drawings.]

A.D. 1868, December 18.—N° 3856.

GRIFFITHS, Edward Samuel.—" Improved means or apparatus for carrying anchors on board after " being weighed."

A pennant is employed, one end being attached to a shackle on the anchor and the other end attached by a loose shackle to the cable. When the anchor is weighed the pennant passes with the cable through the hawse pipe; the pennant is then released from the cable and attached to a rope by which it is drawn back out of the hawse pipe; by then hauling on this rope the anchor is raised up to a davit which has a block over which the rope pass; the anchor can then be stowed inboard. The pennant may have a long link about its middle for use if the anchor fouls. The anchor may be suspended by a slip stopper.

[Printed, 8*d*. Drawing.]

pin which engages in the slot in the bush of the index finger is fixed on the other end of
axis of the index finger is fixed to the case of the instrument and the pin to one end of the

[Printed, 1*s*. Drawings.]

A.D. 1868, December 18.—N° 3858.

EDRIDGE, John, and MERRETT, Joel.—"Improvements in tinning pins and other
" in machinery or apparatus to be used for that purpose."

One part of this invention consists in dispensing with the use of acid or cleaning sol
solution and using a dry flux such as powdered salammoniac for securing the proper adh
the pins or articles. The machinery or apparatus constituting another part of this inv
a globular tinning pot supported horizontally in a furnace and capable of receiving a rotary

The interior of the tinning pot has projections over about three fourths of its surface, th
being plain. The pins or articles to be tinned, together with the requisite amount of t
into the tinning pot, and salammoniac is dusted over the pins or articles by means of a pe
tinning pot being kept rotating. After the pins or articles are tinned the pot is broug
plain part lowest, and the pins or articles are drawn out by means of a properly shape
fall on a horizontal reciprocating sieve or grating, through which they pass, and by means
rapidly into water by which they are cooled.

[Printed, 1*s*. 2*d*. Drawings.]

A.D. 1868, December 18.—N° 3859.

REMINGTON, Samuel.—"An improved method of manufacturing the shoe or breec
" loading fire-arms."

I take a tube of sufficient length to form two or more shoes and of the proper diameter
said tube is then bored throughout its entire length to the proper size to receive the breec
turned on its exterior and then cut into pieces or sections of the required length to form th

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 18.—N° 3860.

IMHOF, Daniel.—(*Complete Specification but no Letters Patent.*)—"Improvements
" of chimes, applicable also to organs."

This invention is for improvements on the invention of the said Daniel Imhof, for whi
dated 29th September 1866, N° 2516, were granted to him. It consists of substituti
revolving bar with projections running lengthways upon it for the star wheels in the
invention, and in dispensing with one of the levers.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 18.—N° 3861.

SPENCER, Thomas.—"Improvements in machinery for spinning cotton, silk, wool,
" materials into yarn, and which may also be used for doubling the same and in

trouble of "putting up" as it is called and having to build the cop as it were himself, as the machine builds the cop itself.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 18.—N° 3862.

ROBINSON, George Dannett.—(*Provisional protection only.*)—" Improvements in carriages."

This invention relates to certain improvements to what are known as Stanhope pheatons and waggonettes, whereby the objectionable mode of getting over the wheel in order to get to the front seat of such carriages is obviated. This invention consists in making one half or a portion of the front seat moveable so that access to such seat may be obtained from the rear of such vehicles by simply moving such portion of the seat and replacing the same.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 18.—N° 3863.

VAUGHAN, Edward Primrose Howard.—(*A communication from Paul Curie.*)—" Improvements in " the manufacture of rosin oil."

This invention consists in combining lime or other oxide of the alkaline or alkaline-earthy metals with the crude oils produced by the distillation of rosin, and then distilling the mixture so formed.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 18.—N° 3864.

PAVY, Eugene, and **CLARK**, James.—" Improvements in the preparation or treatment of jute, china " grass, cotton, and other fibrous materials in the raw state spun into yarns or woven into fabrics."

This invention consists in the chemical treatment of fibrous substances whereby the fibre is deprived of glutinous, resinous, or other such matters, and is to a certain degree disintegrated.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 18.—N° 3865.

PETRIE, John, junior, and **CHEETHAM**, William Thomas.—(*Provisional protection only.*)—" Improvements in apparatus for warming apartments, conservatories, and other structures, applicable also to " evaporating purposes."

This invention consists in the use of steam at atmospheric pressure, or substantially so, for heating and evaporating purposes, the boiler being fed by an adjacent vessel the communication with which is always open.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 18.—N° 3866.

BROWN-WESTHEAD, Marcus, and **SMITH**, Robert.— (*Provisional protection only.*) — " Improvements applicable to thread or twine, which is wound upon bobbins, spools, or other surfaces."

This invention relates to methods of binding the thread or twine to bobbins, spools, and other surfaces while a required length is drawn off.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 19.—N° 3867.

LEROY, Laurent Eugène.—(*Provisional protection only.*)—" An improved method of advertising, and " apparatus therefor."

This invention consists in placing in juxta-position to the front and back of a sheet of thick paper another sheet of stout paper embellished with various ornaments and designs, and cut out in geometrical or fanciful figures, under each of which openings is placed a sheet bearing the advertisements. The cut out sheet on both faces of the intermediate and uncut sheet, and this latter are kept together so as to form but a single and same sheet by means of strips of stout paper pasted on three sides of the margin and traversed on the fourth side by two screws with studs screwing on both faces of the sheet, so that to introduce the cut out sheet and the advertisements and place them in juxta-position to the intermediate sheet it is only necessary to unscrew these two studs.

Each sheet thus prepared is fastened to another similar sheet so as to form a twin sheet by the aid of a double band of linen in which is a strip of stout paper arranged so as to form a joint and permit the volume when open to remain perfectly flat. Each twin sheet is then sewn by the linen band to the back of the cover of the volume or album.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 19.—N° 3868.

BRIERLEY, Joseph.—(*Provisional protection only.*)—" Improved apparatus for facilitating the ventilation " of sewers and drains, and the discharge of noxious gases therefrom, and for preventing the ingress of such " gases to houses or buildings."

This invention relates to the construction of drain " traps " having an additional branch or arm thereto, serving as a ventilator or escape way for the gases from the sewers, and also the use of a permanent dip pipe in connection with such " traps."

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 19.—N° 3869.

MAYNARD, Moses Savery, and GRIME, Robert.—" Improvements in machinery for regulating the " speed of motive-power engines."

Our invention consists in combining the action of two governors, one of which becomes stationary only at the required speed, but continually changes its position so long as that speed is deviated from, and is therefore commonly called an isochronal governor, and the other governor takes a definite position corresponding to and depending on the rate of speed of the engine, a type of which is to be found in the ordinary ball governor.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 19.—N° 3870.

SPENCE, Peter.—" Improvements in the manufacture of alum and aluminous salts."

This invention relates, firstly, to the manufacture of alum from shale of the coal measures, the object being to obtain in a short time a clear solution of sulphate of alumina. Secondly, to the manufacture of aluminous salts from raw or uncalcined shale by the extraction of iron.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 19.—N° 3871.

JONES, Joseph. — " Improvements in drawing off the vapours from baths employed in coating " metals."

This invention refers more particularly to the drawing off of the vapours arising from baths employed in the process of galvanizing or tinning of metals, and consists in employing air or draft flues assisted by revolving fans to draw off the vapour from the top of the baths.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 19.—N° 3872.

THOMSON, William Sparks.—(*Partly a communication from Charles Langdon.*)—(*Provisional protection only.*)—" Improvements in ladies' skirts."

The hoops composed of steel and cloth are connected to the tapes by eyelets, and a bustle capable of adjustment or being dropped out of use is attached to the skirt.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 19.—N° 3873.

DICKSON, John.—" Improvements in the arrangement and construction of windows."

The feature of novelty which constitutes this invention is the arrangement and construction of the parts of sliding windows whereby they are rendered capable of being readily taken asunder for cleaning or repairs, thus obviating the necessity of using ladders for such purposes as at present practised.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 19.—N° 3874.

ASKER, George Henry.—" Improvements in umbrellas, parasols, and sunshades."

This Provisional Specification describes the confining the outer ends of the ribs to the stick when the umbrella, parasol, or sunshade is closed by employing a cap of metal or other material surrounding the stick and mounted on the runner so as to be able to move a short distance upon it longitudinally, or the cap may form a continuation of the runner.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 19.—N° 3875.

WARWICK, Thomas, and BOYLE, Arthur.— " Improvements in machinery to be employed in the " manufacture and testing of the stretchers and ribs of umbrellas and parasols."

The machinery for manufacturing stretchers and ribs consists essentially of the following parts:—A vertical rack capable of intermittent descending motion carries the stretcher wires to be operated upon, which wires are one at a time pushed by a feeder into the machine. A carrier rises and taking up a wire advances it horizontally and brings its ends in succession over the respective lower dies of three sets of dies, each set consisting of two pairs. By the operation of the first set of dies the ends of the wires are flattened and partly shaped, filling up pieces placed in the ends of the wire giving the requisite strength. By the second set of dies the ends of the wire are cut off and rounded; and by the third set of dies the ends of the wire are pierced. The carrier then removes the wire from the machine.

The three operations described are simultaneously performed upon three separate wires, the carrier at each motion lifting and advancing simultaneously three stretcher wires. When making ribs the dies or tools are modified; the top notch end of the wire in this case being treated similarly to the ends of the stretcher wire, while the tip end is formed with a depression to receive the loop.

The machinery for testing the stretchers and ribs consists of two pairs of rolls, the upper pair not being situated immediately over the lower pair. By passing the stretchers or ribs between these rolls they are bent into a wave like figure, and if they do not break or take a permanent set they are fitted to be made up into umbrellas or parasols.

[Printed, 2*s*. 4*d*. Drawings.]

A.D. 1868, December 21.—N° 3876.

LAKE, William Robert. — (*A communication from James Asbury McKean.*) — " Improvements in " machinery for cutting and working rocks and other hard substances, chiefly designed for mining, " tunnelling, and other like operations."

My invention relates to improvements in machinery in which a drill or cutting implement is carried by a reciprocating piston operated by steam or other power within a cylinder. The said cylinder is supported upon an adjustable frame, which allows the machine to work horizontally, vertically, or obliquely, and the drill is fed forward automatically as it penetrates the rock. The frame is preferably constructed of two side plates. The drill cylinder is formed with a trunnion which is fitted to turn in an eye or boss formed on a plate which extends across the frame. The said plate is formed with flanges or projections which are provided with apertures or slots to receive curved arms or sectors attached to the cylinder cover. These arms extend downward and form part of a circle whose centre is the cylinder trunnion, so that if the cylinder is turned on its trunnion they will slide freely through the slots in the flanges of the plate. The trunnion plate is hinged or pivotted to the side plates, and is provided with studs or bolts which extend through curved apertures or slots in the said plates. I sometimes construct the frame of a single hollow column or tube, which is provided at the lower end with a hinged or jointed foot, and at the upper end with an adjustable screw. The said foot and screw have steel points. The said column is provided with a toothed rack, and the cylinder by means of a small wheel or pinion geared into the said rack is raised or lowered upon the column. The feed nut, which is fitted within a box or socket, is formed with ratchet teeth on its periphery, and is rotated by a pawl. To reduce the effects of the rapid action of the machine upon the mechanism I place at the rear of the feed nut a cushion or buffer of india rubber, hair, or other elastic material. On the rear end of the feed nut I form a ring or projection, which lies in contact with the face of the cushion, so that the latter at each stroke of the drill is compressed between the said ring and the bottom of the recess. The threads of the feed screw are made square at the back and inclined or bevelled on the front surface, and the threads of the nut are of corresponding shape. The drill-shank is extended through the feed screu, and is secured by a nut whose exterior is made conical and fitted into a countersunk recess in the end of the said screw. I sometimes produce the feed by means of spiral grooves upon the end of the piston rod, and a ratchet ring provided with feathers to work in the said grooves. A pawl or catch is arranged to take into notches on the ring, and a triangular shaped plate is provided for the purpose of holding the ratchet ring. This ring being thus held the piston rod must make a partial revolution at each successive return stroke of the piston.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, December 21.—N° 3877.

SHAW, Thomas Ramsden.—(*Provisional protection only.*)—" Improvements in the method of lubricating " the bearings of the shafting journals of machinery and other journals or bearings."

This invention is designed for the purpose of supplying oil or other lubricant to the bearings of shafting journals and the like, and consists in forming one or more recesses in the lower step or bearing, or forming the lower step in two or more pieces with a recess or with recesses between the same, each recess being of a semi-annular form or nearly so, and provided with a mouth or orifice through which is inserted a long piece the shed into which they were introduced, the ends of the threads thrown out of the fabric remaining and being to some extent held between the back of the fabric and those wires which have not been withdrawn.

The ends of those threads which are not being woven are held by means of clamping or holding surfaces at a short distance from the point at which the weft is being beaten up, the pressure of such clamping or holding surfaces being relieved when the fabric is being taken up.

The clamping or holding surface on the face side of the fabric may be stationary and so placed as to be at a short distance from the front face of the fabric being woven, while the clamp or holding surface at the back of the fabric is capable of movement so as when required to press the ends of the warp threads and the fabric against the stationary clamp or holding surface. The moveable clamp or holding surface is so constructed that when the positive pressure is removed such clamp will still be caused by the aid of springs or otherwise to press against the back of the fabric, but with a less force than when the positive pressure is applied, and where wires are employed either for forming a piled surface to the fabric or at the back of the fabric for cutting the threads as above described it is preferred to flute the clamping surfaces so as partially to embrace such wires and to form grinding surfaces upon the lower clamp to guide the wires on to the clamping surface.

In addition to the clamps previously described other clamps or holding surfaces are employed to act upon the figuring warp threads at the back of the harness of the loom so actuated as to close upon and hold the ornamenting warp threads before and when the positive pressure is removed from the clamps for holding the ends of the ornamenting or figuring warp threads.

The clamps at the back of the harness are caused to move a suitable distance to put sufficient tension upon the ornamenting warps to facilitate the selection of the warp threads and the formation of a clear shed, after which the clamps are opened. The amount of movement given to the clamps at the back of the harness is readily capable of adjustment, and this part of the invention is applicable when weaving the fabrics above named upon looms of the ordinary construction.

Where a shed is formed for the introduction of a cutting wire according to this invention to sever the ornamenting or figuring threads at the back of the fabric as previously described the jacquard apparatus is so arranged that each harness cord is capable of being acted upon by three distinct sets of selecting instruments. One set of such selecting instruments is employed for shedding those figuring threads which are about to be thrown upon the front face of the fabric so as to tie them in and so prepare them for forming part of the surface or figure, and the same set of selecting instruments may be employed according to this invention for shedding such threads after they have been brought upon the front face of the fabric in order to weave them into the body of the fabric before they are thrown out of and severed from it as above described.

The second set of selecting instruments is employed for forming the "figure shed" by which the figure threads are brought to the front face of the fabric to form part of the figure and for the insertion of a wire when the fabric is intended to have a pile surface. The third set of selecting instruments is employed for throwing out those threads which are no longer required to form part of the design or ornamental surface and so forming the shed into which the wire is inserted, by means of which the ornamenting or figure threads are to be severed from the back of the fabric.

The above described three distinct sets of selecting instruments may be operated upon by one, two, or three sets of cards and cylinders or other jacquard surfaces.

It is preferred, however, to connect the whole of the cards employed into one set and cause them to act upon each of the three sets of selecting instruments, and it is also preferred to so actuate the elevating mechanism that the threads which have been raised to form the ornamental or figure shed will be held by such elevating mechanism so that the threads can be again raised to form a shed for the purpose of weaving them into the fabric before they are thrown out to be cut as above described.

It is also preferred to make the top board of the jacquard apparatus moveable so as to rise and fall, the lower set of selecting instruments in this case requiring no elevating mechanism and acting always to retain all the "tail cords," except those which are to be lowered with the top board so as to throw out the threads which are about to be cut from the back of the fabric as above described.

Where a moveable top board is employed as above described according to one part of this invention trumpet mouths or guiding eyes are inserted in the selecting needles or instruments so as to insure the passage of the knots in the "tail cords" through such needles or instruments.

It is preferred to so actuate the jacquard apparatus that the figure shed and the shed for the cutting wire at the back of the fabric are formed at the same time, and when forming a pile fabric to insert the wires at the front and the back of the fabric at the same time and from opposite sides of the loom.

Where the same set of threads are brought several times in succession on to the figure surface of the fabric a suitable number of warp threads are provided under the command of the jacquard apparatus which can be raised and woven into the fabric when required to form a shed to hold the cutting wires.

When weaving carpets and other fabrics which require solidity, substance, or body to compensate for the threads which are withdrawn and cut from the fabric in addition to the ordinary warp employed a "stuffing "chain" or additional warp is introduced.

It will be understood that the arrangement of mechanism for carrying this invention into practice may be greatly varied, and that though it is preferred to form a shed and insert a cutting wire at the back of the fabric such wires may be cut out of the fabric by other means, and this invention may be carried into practice by employing a plough or other instrument to raise the threads which have to be cut from the back of the fabric for cutting.

Size may be applied to the back of the fabric, and the ends of the threads at the back of the fabric may be sheared or otherwise removed.

[Printed, 9s. Drawings.]

A.D. 1868, December 21.—N° 3882.

LEWIS, William.—(*Provisional protection only.*)—"Improvements in ploughs for tilling land."

These improvements in ploughs relate, First, to the method of forming or constructing the plough by having the side of the beam to which the land side or frame and coulters are attached made with an angular or semicircular face.

The Second improvement relates to a new method of attaching the plough wheel to the beam.

The Third part of these improvements in ploughs relates to the construction of the land or plough wheels to insure lubrication of the axles.

The Fourth part of these improvements in ploughs relates to the arrangement of the coulter at such an angle to the perpendicular as will give an undercut of five eighths of an inch (more or less) in six inches, and in so arranging the land side or frame at a corresponding angle with the coulter that it will follow in the same track, thus producing a better furrow, keeping the plough more steadily at its work, and presenting a better surface for the action of the harrows.

The Fifth part of these improvements in ploughs relates to the arrangement of the "lever neck."

Another part of these improvements in ploughs for tilling land relates to an arrangement whereby the furrow slices on heavy stiff or clay land can be opened or separated for the fertilizing action of the atmosphere, also for the purpose of facilitating the breaking up and pulverizing action of the harrows.

[Printed, 4d. No Drawings.]

A.D. 1868, December 21.—N° 3883.

BAGGS, Isham.—(*Provisional protection only.*)—"Improvements in the manufacture of iron."

This invention consists in the revivification of the gases issuing from the trunnel head of an iron furnace and their continuous re-employment as gaseous fuel in the furnace itself. The gases are passed over ignited carbon, and blowing apparatus is used. The gases are preferably cooled on their road from the furnace. In some cases they are more fully burned by admitting atmospheric air to them with ignition on their road from the furnace to the blowing apparatus.

[Printed, 4d. No Drawings.]

A.D. 1868, December 21.—N° 3884.

WALKER, John Scarisbrick.—"Improvements in machinery or apparatus for undermining, 'holeing,' "and cutting coal and other mineral."

The invention consists principally in the use or employment for such purpose of a peculiar form of disc cutter mounted horizontally on a short vertical shaft and driven by bevil gearing actuated by a compressed air engine; the whole being mounted on a carriage supported on wheels running on a tramway, and propelled slowly along the face of the coal or mineral by means of worms and worm wheels, also actuated by the same compressed air engine.

The cutter consists principally of a disc or wheel provided with a vertical rim or flange all round its circumference. Inside this rim or flange is cast a circle of bevil teeth projecting upwards from the face of the disc or wheel, but not so high as the edge of the rim or flange above named. The outer edge or periphery of the rim or flange is provided at intervals with snugs or projections, between which the teeth or cutters are fixed by means of keys.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 21.—N° 3885.

LUND, Laurentius Andreas Waldemar, and AXMANN, Edmund.—"Improvements in the "manufacture of brooches, buttons, solitaires, and other articles of jewellery or ornament."

This invention relates to the manufacture of various articles of jewellery or ornament, such as brooches, buttons, solitaires, bracelets, napkin rings, lockets, earrings, scarf pins, and such other ornamental articles and fastenings as are made of thin sheet gold or other precious metal, either plain or stamped, embossed, engraved, or otherwise ornamented, and either with or without the addition of enamel or precious or other stones or pebbles.

According to our invention we propose to manufacture such articles in the following manner:—We first form the exterior surface of the article of gold, silver, aluminium, or other precious metal by stamping, pressing, "spinning," or in any other ordinary manner, leaving the edge turned up a suitable distance, and where the articles are either circular or oval rollers may also be used cut or shaped to the exterior surface of the article. We then deposit the article in a die which fits the exterior surface, and we press into the interior thereof horn, ivory, tortoiseshell, vulcanite, gutta percha, wood, or other suitable material or compound in a warm or plastic state, so as to fill up the interior quite solid, leaving sufficient space when required for a covering or back plate of gold or other metal or alloy, or of ivory, mother of pearl, or other suitable material. We then insert the covering or back plate and bend or press over it the rim or edge of the exterior surface by pressing, burnishing, "spinning," or in any other known manner, so as to combine the whole and form, as it were, one solid piece, thus producing a stronger and cheaper article than those hitherto made.

[Printed, 4d. No Drawings.]

A.D. 1868, December 21.—N° 3886.

COWPER, Edward Alfred.—(*Provisional protection only.*)—" Improvements in velocipedes."

This invention embraces improvements in two wheeled velocipedes having cranks to the front axle. The wheels are made very stiff and light, of hard drawn steel wire spokes & hollow tyres, with cranks capable of adjustment in length by a screw, a joint in the middle of the back bone to allow the velocipede to be folded into a small space, and a friction or other clutch to hold the front wheel from turning at will. Anti-friction rollers to the axles and india-rubber tyre bands to the wheels may be used to further reduce draught. The frame is proposed to be made of angle iron or angle steel.

[Printed, 4d. No Drawings.]

A.D. 1868, December 21.—N° 3887.

WHITAKER, Richard.—" Improvements in fastenings or locks applicable to locks, bolts, latches, sashes, " shutters, bags, and all other purposes where fastenings are or may be required."

In these improvements in fastenings or locks the bolt is made by preference of a segmental form, and free to move on an axis or round its outer edge, in a box, case, or rim, or by a groove and fillet. The bolt proper is provided with a projection or arm, or with projections or arms, and sometimes with slots or grooves, which, through the action of key bits, whether the ordinary bits or jointed bits or any description of bit at present in use, shoots or throws the bolt.

[Printed, 1s. Drawing.]

A.D. 1868, December 21.—N° 3888.

PIDDING, William. — (*Provisional protection only.*) — " Improvements in mechanism applicable to " locomotion."

My Invention consists in disconnected portable rails in parallel lines connected with a separate naive and axle placed on to a vehicle for the ordinary wheels thereof to run on, also in wheels divested of their paripharies or tires, to move up and down by means of the mechanism described in my Specification, so that the vehicle shall always be parallel with the road traversed.

[Printed, 4d. No Drawings.]

A.D. 1868, December 21.—N° 3889.

WILKINSON, John, the younger.—" An improved manufacture of saddle cloths and numnahs or cavalry " blankets."

Saddle cloths made of moulded felted cloth containing a woven fabric within the felt.

[Printed, 4d. No Drawings.]

A.D. 1868, December 21.—N° 3890.

HUBBELL, Theodore Byron.—(*A communication from Augustus Hubbell.*)—(*Provisional protection only.*) —" An improved construction of bandage to be used by females."

An elastic bandage carrying an absorbent material.

[Printed, 4d. No Drawings.]

A.D. 1868, December 21.—N° 3891.

JOHNSON, John Henry.—(*A communication from Charles Aimé Perrey.*)—(*Provisional protection only.*)—"Improvements in sharpening and setting saws, and in the machinery or apparatus employed therein."

Sharpening the teeth of ribbon saws without dismounting the saw, by the aid of a rotatory file in the form of a screw thread or helix mounted on a rotatory spindle carried in a frame temporarily adjusted on to the saw frame, and worked by a winch handle and bevel gearing. Also "setting" saw teeth by the aid of adjustable jaws provided with divided scales and indicators so that the exact required amount of "set" may be insured.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 21.—N° 3892.

HAMMOND, Henry Woodcroft.—(*A communication from Philip Justice.*)—"A spring paul washer."

This invention relates to washers to be used with bolts and nuts, and consists in cutting through a washer of the ordinary shape so as to present taper edges, and allow of its being forced from the form of a plane to that of a helix, the object being that when it is placed in front of a nut and screwed so tight as to again assume the form of a plane, the cut edges will act with such force against the nut and other part to which it is screwed as to prevent the nut from turning round when violently shaken by railway trains or other means.

[Printed, 6*d.* Drawing.]

A.D. 1868, December 21.—N° 3893.

GEDGE, William Edward. — (*A communication from Felicie Labat and Joseph Meric.*) — "A novel "bituminous composition."

This resinous bitumen is composed of white or liquid resin, of lampblack, and of sulphur, and red sand direct from the pit.

It is used in the form of bricks or is laid on any desired foundation, and is applicable for bottoms of reservoirs, paving, roofing, and other purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 21.—N° 3894.

JARRE, Pierre Gabriel.—"A hydro-pneumatic pump."

This invention consists in the combination of an ordinary air pump with a reservoir or reservoirs and distributing and float apparatus of special construction, the entire combination constituting a hydro-pneumatic pump, the motive power for working which need not be contiguous to the liquid to be pumped, and may be of any kind.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 21.—N° 3895.

GEDGE, William Edward. — (*A communication from Claud Renard, Michel Perret, and Jules César Voituret.*)—"An improved construction of cock or tap."

This invention consists in constructing a cock with a chamber closed by a screw cap pierced for the passage of the stem by which the cock is turned on and off. This stem also passes through a leather washer and carries a metal disc in contact with the under side of said washer. Below this first stem is a second stem or plug united to the first by a mortice, and also carrying a metal disc bearing on the upper surface of a leather washer resting upon a disc forming the bottom or the chamber. The lower discs and washer are pierced with one or several holes.

The liquid arriving by the barrel of the cock fills the chamber, and pressing the two metal discs against the two leather washers perfectly closes it above and below, the water pressure being in some cases assisted by a helical spring coiled round the two stems. The stems being now turned by a key or handle on the upper one, the lower disc turns horizontally on its axis, its openings are brought over those of the lower leather washer and bottom of the chamber and the water passes from the chamber to the spout.

The lower plug and washer are sometimes conical, the action remaining the same.

The shape of the cock and the position of the spout are optional; the pressure of the metal discs on the leather washers prevents any leakage; the progressive closing of the openings obviates any shock in shutting off; and a cock thus constructed is adapted for any pressure.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, December 21.—N° 3896.

BREEDEN, Joseph.—"Improvements in taps or valves for liquids, gases, and vapours."

According to this invention the body of the tap or valve is divided into two parts, the bottom part communicating with the ingress pipe and the top part with the egress pipe. In the division of the body is a conical valve seat upon which is a valve opening downwards. The valve is pressed upwards and kept to its seat by a coiled spring and the pressure of the liquid, gas, or vapour. A screw rod above the valve and working in an internal screwed tube at the top of the chamber carries at its outer end a hand wheel, by turning which the lower end of the rod presses upon and depresses the valve from its seat and opens the tap. By reversing the motion of the hand wheel the rod is lifted from the valve and the latter raised to its seat by the coiled spring below and around its spindle. By connecting the bottom of the screw rod with the valve the valve may be raised to its seat with sufficient force to crush any solid particles introduced between the valve and seat.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 21.—N° 3897.

CLAYTON, Joseph.—(*Provisional protection only.*)—" Improvements in apparatus for working the valves " of steam and other engines."

This Provisional Specification describes improvements which relate to engines in which the sudden closing of the steam admission valve is obtained by a spring or equivalent instrument which is left free to act at the proper instant by releasing the valve from the eccentric gear by which it is opened.

An axis, the partial rotation of which opens and closes the valve, is clutched with and released from an arm turning upon it and actuated by the eccentric.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 21.—N° 3898.

RITCHIE, George.—" Improvements in constructing parasols and weather protectors or tents."

This Provisional Specification describes forming the outer end of each of the stretchers of parasols and weather protectors or tents to enter and slide in a groove formed longitudinally along each rib. Or the stretchers may be jointed to the ribs and slide in undercut grooves in the stick. Methods of securing the covering and lining to the ribs are also described.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 21.—N° 3899.

CLARK, William Richard.—(*Provisional protection only.*)—" Improvements in apparatus for com- " municating between the passengers and guard and engine-driver of railway trains."

This Provisional Specification describes placing a signal lantern in the guard's van and another on the engine, the glasses of which are covered by hinged screens, which screens can be lowered by the guard or passengers by means of compressing the air contained in a tube which runs along the top of the carriages by bellows apparatus on each carriage.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 21.—N° 3900.

VANNER, Henry Thornton, and PREST, Edward.—(*A communication from Thomas Saunby.*)— " Improvements in currying and dressing leather."

This Provisional Specification describes employing the residuum oil obtained when distilling petroleum in currying and dressing leather.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 22.—N° 3901.

PAINE, Lewis James.—(*Provisional protection only.*)—" New or improved removable collars and " comforters combined."

This said invention consists in a new or improved removable collar, or collar and comforter combined, for attaching above the ordinary fold down collar of great-coats, coats, waistcoats, jackets, cloaks, and other upper garments, made of fur, velvet, cloth, imitation fur cloth, or any other suitable or fashionable material worn for comfort or elegance round the neck. One arrangement of this said invention consists in making a collar of fur or other material of similar shape, but a little larger than the collar over which it is to be worn, and fitting a long thin hook at each end and another similar hook at the back, and having small holes made in the ordinary collar of the coat, into which these hooks can be placed, thus making a double or second collar, which can be easily attached or detached, and when required as a comforter the collar may be turned up round the neck of the wearer, with the fur inside, so that both collars would then form a most comfortable and close fitting cravat or muffler.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 22.—N° 3902.

JENSEN, Johannes.—(*Provisional protection only.*)—" Reefing and unreefing the mainsail and jib of " vessels."

Reefing and unreefing mainsails and jibs by a very simple and economical process, and thereby effecting great saving of life, time, and wear and tear of sails.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 22.—N° 3903.

CHALLINER, WILLIAM.—(*Provisional protection not allowed.*)—" Stamping forks or spoons of steel, iron, " silver, or any other metal."

For stamping forks and spoons from metals, properly shaped in dies, including the prongs, shanks, and bolsters, of any design, and guard holes where required.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 22.—N° 3904.

PALMER, JAMES.—" Improvements in the manufacture of steel agricultural and horticultural and other " like forks."

The said forks are usually made from flattened bars of steel made by forging and partially divided by slits into a series branches, from which the tines of the fork are made. These flattened and divided bars of steel are called moulds. This invention consists in making the said forked moulds by casting them either in sand casting moulds or metal or chill casting moulds. The cast steel fork moulds are finished and made into forks by forging and drawing out the same and attaching the langet thereto in the ordinary way.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 22.—N° 3905.

TIDCOMBE, GEORGE, the younger.—" Improvements in apparatus for conducting paper from paper-" making machinery or otherwise, in order to its being cut into sheets, and also for facilitating the " collecting of paper as cut into sheets, and in damping paper for printing."

The invention relates to the use of moveable guides adapted to conduct the paper as it passes from the paper making machine or other source of supply to alternate or series of cutters, and the adaptation of similar means to conduct the paper as cut into sheets to lay boards or other receivers to facilitate collecting. Or in place of the hands being employed in collecting, the sheets as cut may pass into a chamber, in which they are collected by vacuum therein and the pressure of the external air. The damping is effected by passing the paper into chambers by sheets of felt or other conductors passing over rollers with surfaces fitting between them for the purpose of enclosing steam admitted therein by perforated pipes.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, December 22.—N° 3906.

JOHNSON, JOHN HENRY.—(*A communication from Eugène Damien and Joseph Kister.*)—" Improvements " in machinery or apparatus for the manufacture of sheaves or pullies for hoisting and hauling tackle."

This invention relates to the manufacture, by the aid of spiral machinery, of metal covered sheaves or pullies for blocks and other hoisting and hauling tackle, whereby such sheaves or pullies can be more expeditiously and economically produced than by the ordinary hand process at present adopted. The operations to be accomplished in carrying out this invention are, *First,* the application to the grooved periphery of a wooden sheave or pulley of a sheet metal covering or casing of an uniform thickness throughout. Second, the insertion of a metallic boss into the centre of the pulley, both of which operations it is proposed to accomplish by the aid of machinery.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, December 22.—N° 3907.

GISBORNE, FREDERIC NEWTON.—(*Provisional protection only.*)—" Improvements in means or apparatus " for effecting the explosion of torpedoes and other explosive charges, part of which improvements is " applicable to electric telegraphy."

For this purpose the inventor attaches to the shell of the explosive charge a compound needle, which is mounted upon a pivot or centre of motion, and is suitably counterbalanced so as to keep the point thereof away from a contact piece, also in connection with the shell of the explosive charge. The needle is placed in metallic contact with one pole, whilst the contact piece is in metallic contact with the other pole of a suitable electrical machine carried by the shell of the explosive charge, or placed at any suitable distance therefrom and connected thereto by means of a conducting wire. Thus when a vessel passes over the explosive charge the needle is attracted to the contact piece, and the electric circuit is completed, whereby a current of electricity is passed through the charge to explode it.

Another arrangement consists in mounting two of such compound needles upon points in such manner that their points, which are oppositely magnetized, are placed at a suitable distance from each other, so that the magnetic force shall keep them away from ring or other contact pieces. The needles and the ring or other contact pieces are suitably insulated from each other, and the electric circuit is completed as before described. The compound needles which I employ consist of several needles fixed together and mounted on a pivot point or centre of motion at one of their poles, and provided with suitable weighted arms attached thereto, so as to counterbalance them. If desired, instead of causing such needles to be acted upon by a ship passing over or near them, one or more large permanent or electro magnets are employed, placed at any suitable distance and separated from the explosive charge, and such magnets are mounted upon centres of motion, so that they may be suddenly rotated in such manner as to reverse their postion, by which means the needles carried by the explosive charge will be suitably deflected and the electric circuit thereby completed.

This mode of deflecting a needle is also applicable to telegraphing without the aid of a conducting wire.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 22.—N° 3908.

SMART, Samuel.—" Improvements in steam and other boilers."

The invention consists, Firstly, in placing horizontal suspended water tubes containing return fire tubes into the furnaces of steam boilers.

Secondly, In placing syphons into vertical or inclined water tubes for the purpose of emptying such tubes when the boiler is blown off; and,

Thirdly, In placing a baffle plate under the ends of such tubes in the furnace of steam boilers for the purpose of protecting the ends of such tubes from the action of the fire, and so as to act as a smoke consumer.

The above improvements are also applicable to boilers for other purposes.

[Printed, 1*s*. Drawing.]

A.D. 1868, December 22.—N° 3909.

GISBORNE, Frederic Newton.—(*Provisional protection only.*)—" Improvements in means or apparatus " for generating gas used for heating and lighting, and in means for heating by gas."

For this purpose apparatus is employed, consisting of a cylinder provided with two chambers at its lower part, into one of which is admitted air, and into the other gas.

From the top of the lower chamber rise pipes or tubes which pass up to or through the top of the gas chamber.

A combustion chamber is formed above the gas chamber, and a boiler above the combustion chamber, through which boiler pass flues to carry off the products of combustion, and such tubes rise up above the water level, and immediately above such tubes are fixed one or more retorts.

The steam and products of combustion are caused to circulate through suitable tubes, or the products of combustion may be allowed to escape direct into the air. Suitable pressure gauges and safety valves are employed, and the water level is maintained by a suitable head.

If desired the hot water may be caused to circulate through the heating tubes, and stand pipes or other means employed to keep the tubes full of water and allow for expansion.

The gas may be generated from any suitable material, but oil or bitumen is preferred, the bitumen being melted by the heat of the apparatus before passing into the retorts. When such materials are employed the supply to the retorts is regulated by means of the gasometer.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 22.—N° 3910.

SNAPE, John.—" Improvements in pumps or apparatus for drawing and forcing fluids, particularly " applicable to the ventilation of mines."

Two drums are employed at the upper end of the air shaft of mines, one drum having convex surfaces and the other concave surfaces to take into the said convex surfaces. The drums revolve in contrary directions, and at one part of their revolution pass round segments of circles. The air drawn into the spaces in the peripheries of the drums is carried round the segments until it reaches the open air. Or if it is required to force as well as to draw the air the drums are enclosed in a casing having a proper outlet.

To drive the drums an engine is used with a piston rod passing through both ends; the ends of the piston rod are respectively connected to cranks on the two drums, the cranks being reverse.

[Printed, 10*d*. Drawing.]

Secondly—In providing double folding gates at each end of the dock, each folding gate being in two divisions, an upper and a lower one.

Thirdly—In a combination of cork floats with air-tight compartments to regulate the buoyancy of the dock.

[Printed, 10*d.* Drawings.]

A.D. 1868, December 23.—N° 3917.

MAUGHAN, Benjamin Waddy.—"Improvements in apparatus for the heating of water and other liquids " applicable for baths and other purposes."

The invention relates to improved means employed for heating water and other liquids by causing them to enter a heating chamber and to flow in thin sheets or numerous minute streams over or along diaphragms of metal or other material and the sides of the heating chamber, and exposing such liquids in that state to currents of heated air. The liquids so heated may be used for baths and for other purposes.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 23.—N° 3918.

THORNTON, Edwin Martin.—(*Provisional protection only.*)—"Improvements in 'footstools,' foot- " cushions, or hassocks, which improvements may also be applied to chairs, couches, or other similar articles " of furniture."

This invention consists in adapting and employing a vessel or receiver enclosed in the footstool, foot-cushion, or hassock, and surrounded on all sides except the top with a non-conducting material to prevent the escape of heat from the water excepting through apertures or holes in a perforated cover attached by hinges or other fastenings to the vessel or receiver.

The heat from the water diffuses itself through the perforated cover and gives warmth for a considerable time to the external covering of the footstool, cushion, or hassock made of the ordinary materials.

This invention can also be applied to chairs, couches, and other similar articles of furniture.

Or instead of boiling or hot water ice may be placed in the vessel or receiver in cases where cold air may be required to be diffused.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 23.—N° 3919.

WOLMERSHAUSEN, George Michael.—(*Provisional protection only.*)—" An apparatus adjustable to " the form of the human figure for the purposes of measuring."

This invention consists in measuring the human body for coats or similar articles of dress through the medium of a jointed framework formed of metallic bands or belts, so arranged as to admit of being accurately adjusted to the requirements of the figure, and subsequently employed as a model for cutting a more symmetrical garment.

[Printed, 4*d.* No Drawing.]

A.D. 1868, December 23.—N° 3920.

REEVE, William George.—" Improvements in inkstands."

This invention consists in constructing inkstands, firstly, so that they will close automatically when no longer required for use. Secondly, so that if upset or otherwise no ink will be spilled by reason of the self-righting properties and the small quantity of ink that can flow from the supply orifice.

[Printed, 6*d.* Drawing.]

A.D. 1868, December 23.—N° 3921.

HOOKHAM, George.—" Improvements in sash lines and pulleys for the same, also in fastening such " lines to sashes, and in sashes and frames used therewith; such improvements in sash lines being " applicable to cords, lines, straps, and bands for cranes and other purposes."

Instead of the ordinary sash line the inventor uses a band of steel tinned, plated, or otherwise protected from rust, sometimes bound with wire, or hempen line rendered waterproof may be used. In some cases gut bound with wire is used. The metal line is secured by hook or other suitable arrangements. The sashes are suitably arranged for these lines, and have improved metal pockets. These bands are applicable for driving machinery and for other purposes.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 23.—N° 3922.

LOWRY, George.—" Improvements in bushes or ferrules for casks and other purposes, and for improve- " ments in fixing the same."

Improvements in forming a ferrule of malleable iron, or other material, with a flanch at one end to be inserted and fixed in a hole in the barrel, and by an expanding mandril the ferrule is pressed firmly in its place. The ferrule is then ready to receive the cork or bung used for stopping barrels or casks.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 23.—N° 3923.

THOMPSON, Henry Graham.—" A new and improved manufacture of figured terry or cut pile carpets " and other figured fabrics."

This invention relates to a new and improved manufacture of figured terry, cut pile or other carpets, and other figured fabrics, whereby a new description of figured woven fabric [*is**] produced.

According to this invention when weaving the above-named fabrics after such warp threads have been raised to the surface in such order as they are successively required to form part of the ornamental surface or design, they are woven for a short distance (one, two, three, or more picks) into the body of the fabric, and then withdrawn and cut off from the back of the fabric, the ends of such threads when again required being first woven into the body of the fabric next raised on to the surface to form the pile or figure, then again woven for one, two, three, or more picks into the fabric, and then withdrawn and again cut off from the back of the fabric.

A Brussels carpet or other terry or cut pile figured fabric manufactured according to this invention will have as large a quantity of the more costly figure or ornamenting threads thrown on the surface throughout the entire length of the fabric as those heretofore manufactured, but in place of such more expensive yarns extending and being hidden from view within the body of fabric between the points at which they appear upon the surface of the fabric, such yarns in a fabric manufactured according to this invention are only introduced into the fabric when and so long only as they are required to form part of the terry or cut pile or other ornamental figured surface.

According to this invention I introduce a " stuffing chain " or additional warp threads to fill up and give substance to the fabric, and to take the place of the more expensive figuring or ornamenting threads which have been withdrawn.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 23.—N° 3924.

JOHNSON, John Henry.—(*A communication from Edward Brigham Goodall.*)—(*Provisional protection only.*)—" Improvements in the construction of plates for holding artificial teeth."

This invention consists essentially in making the plates to which artificial teeth are secured of an elastic or springy material and of such shape or form that whilst adapting themselves to the form of the mouth they will be held in their place when inserted in the mouth by their inherent elasticity alone without the aid of clasps or suction.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 23.—N° 3925.

GEDGE, William Edward.—(*A communication from Léon Victor Jacquemard.*)—" An improved " electric bell sounding and telegraphing apparatus for domestic use."

This invention consist in the use of an electric pile having a zinc cylinder so arranged that it is brought into contact with the electricity exciting liquid only at the moment of communicating the current, being interrupted directly the pressure of the hand on the signalling knob is removed. This pile also have a feeding apparatus in the form of or which may even be an ordinary bottle, inverted when full and slightly dipping into the reservoir of electricity exciting liquid in which the zinc dips under pressure, the effect being that as the liquid in the reservoir is used or evaporates an equal quantity is supplied by the feeder, and the liquid always maintained at the same level.

A pile thus combined and held in a wooden box more or less ornamented is placed in each apartment, and it is in connection by wires with an arrangement of bells and an indicator placed contiguous to the domestic offices, an electro-magnetic battery being sometimes used in order to return the signals transmitted from the apartment, and the system of bells and the indicators being either combined or separate.

The electric current being only momentarily established the zinc deteriorates but very slowly the waste of electricity exciting liquid is very slight, is constantly resupplied from the feeder, and the pile therefore works for years without renewal.

[Printed, 1*s*. 0*d*. Drawings.]

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* The word "is" is found in the copy of the Abridgment delivered by the Applicant, but does not appear in the original Abridgment.

A.D. 1868, December 23.—N° 3926.

WARREN, Frederic Pelham.—"Improvements in cooking apparatus, which improvements are applicable "also to other apparatus for transmitting heat to liquids and generating steam."

According to this invention the two boilers with projecting parts, as described in the Specification to Patent N° 894, dated 27th March 1866, are dispensed with, and in combination with the oven and hot plate described in said Specification a single boiler is employed of novel construction, having two projecting parts of peculiar form so arranged that the space between the lower parts of their inner sides constitutes a furnace or fire place, the side walls of which are formed by the said projecting parts, and the crown of the furnace or fire place is formed by the under surface of a boot projecting from the inner side of one of the aforesaid projecting parts, which boot takes into a corresponding concavity or recess situated between an upper and a lower boot of the inner side of the other projecting part of the boiler, thereby forming a peculiarly curved flue, which first passes for a certain distance horizontally in one direction between the under side of the boot of the one projecting part and the upper side of the lower boot of the other projecting part of the boiler, thence upward for a short distance in a semi-circular direction, afterwards proceeding horizontally for a short distance between the upper surface of the boot of the one projecting part and the under side of the upper boot of the other projecting part of the boiler in a contrary direction to its first mentioned horizontal course, and lastly in a vertical direction till it joins another flue situated between the upper surfaces of the projecting parts of the boiler and the under side of the oven, from whence the products of combustion proceed as described in the Specification to the aforesaid Patent.

Boilers of similar construction may be employed in combination with steam cooking ovens in apparatus of other descriptions than that above referred to, and will be specially advantageous in apparatus intended to cook for large numbers; as, for instance, in apparatus for the use of hospitals and asylums.

In applying this invention to other apparatus for transmitting heat to liquids and generating steam the main body of the boiler may be made of any convenient form so long as the peculiar construction and arrangement of the projecting parts and boots as already described is maintained, and boilers so constructed may be built in with brickwork or combined with casings so as to complete the formation of the requisite flues.

[Printed, 1*s.* 6*d.* Drawings.]

A.D. 1868, December 23.—N° 3927.

WILSON, Joseph William.—"Improvements in the construction of hydraulic lifts for raising floating "bodies."

Hydraulic cylinders fitted with floats for receiving cross girders which carry the ship.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, December 23.—N° 3928.

NEWTON, Alfred Vincent.—(*A communication from Thaddeus Hyatt.*)—"Improvements in treating "cod liver oil and other oily or fatty matters to render them acceptable to the palate."

Treating oily and fatty matters with carbonic acid gas, syrup, mineral waters, and medical preparations.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 23.—N° 3929.

CLARK, Alexander Melville.—(*A communication from Joseph Paul Clovis.*)—"Improvements in gas "burners."

The gas burner is composed of a central conical or other chamber or space open at top and bottom, and provided with a hollow screwed stem for attaching to the lower part of the burner.

A cap perforated at top is placed over the conical chamber so as to form a gas space, the supply being obtained through the screwed stem and hollow arms communicating therewith.

The central chamber may be made of porcelain if desired.

[Printed, 10*d.* Drawings.]

A.D. 1868, December 24.—N° 3930.

WALENN, William Henry.—"Improvements in the electric deposition of copper and brass."

This invention relates to improvements upon certain parts of that set forth in Specification N° 1540 (A.D. 1857), and to other improvements.

The features of novelty which constitute the invention are:—

A brass solution, suitable for working by means of a porous cell, and without a separate battery, contains certain proportions of sulphate of zinc, nitrate of copper, ammonia-water, and cyanide of potassium.

A second brass solution, chiefly useful where heat is employed, contains cyanide of potassium, nitrate of ammonium, sulphate of ammonium, cupric cyanide, and zinc cyanide.

Alkaline solutions of copper are improved by the addition thereto of a small proportion of a salt of zinc.

In a porous-cell arrangement for copper and brass solutions the surface of the zinc solution is higher than that of the depositing solution.

The evolution of hydrogen gas, during electro-deposition, in alkaline copper and brass solutions, is stopped by the addition thereto of the hydrated oxides of copper and zinc in sufficient quantity. Ammoniuret of copper also has this effect. In a third process the oxides of copper and zinc are dissolved in ammonia-water, and the resulting solution is added to the depositing solution.

In a brass or copper solution containing cyanide of potassium and tartrate of ammonium (see Specification N° 1540, A.D. 1867), also in the above-described copper and brass solutions, and no others, a porous-cell arrangement supplies the electric power, and may be used alone or in connection with a separate battery, the hydrated oxides of the metal or metals being supplied to the depositing solution. Cyanide and alkaline solutions are next the amalgamated zinc.

An acid copper solution contain bisulphide of carbon, sulphate of copper, and a small proportion of sulphate of zinc.

[Printed, 6*d*. No Drawings.]

A.D. 1868, December 24.—N° 3931.

WARREN, THOMAS.—" Improvements in glass furnaces."

This invention consists, *firstly*, in making the sides of the melting tank of solid brickwork; *secondly*, in making the furnaces with the outer parts of their roofs considerably lower than the inner parts; and *thirdly*, in forming a thin air flue under the passage leading from each furnace to the tank.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 24.—N° 3932.

JOHNSON, JOHN HENRY. — (*A communication from Henri Gensoul.*) — (*Provisional protection only.*)— " Improvements in the preparation and apparatus for transmission of electric telegraphic despatches."

This invention has for its object the rapid transmission of electric telegraphic despatches, for the accomplishment of which end it is proposed to adopt a stenographic arrangement of the letters of the alphabet, single letters being not only indicated by certain conventional signs, but also such combinations of two or more letters as most frequently occur in the common words of the language adopted. According to one mode of carrying out this invention the despatch to be transmitted is first printed upon a strip of metallised paper in non conducting ink, by the aid of type worked by three series of keys, each series of keys being composed of two rows containing four keys in each row. The signs which are printed by the type on the paper in transverse lines consists simply of broad and narrow square dots used either singly or in various combinations of not more than four, and with the spaces or intervals between the dots differently disposed according to the particular letters or combinations of letters required. This printed despatch is then conveyed to the transmitting instrument wherein tracer points are caused to traverse along each line of signs previously printed in non-conducting ink on the metallized paper, and thereby, as is well understood, direct the corresponding currents along the line wire, the message being received and recorded by the well-known " Morse " instrument. According to another mode of transmitting electric telegraphic despatches, the use of paper having the despatch printed thereon, as hereinbefore described, is entirely dispensed with, the message being composed and transmitted direct in one and the same machine.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 24.—N° 3933.

LAKE, WILLIAM ROBERT. — (*A communication from François de Amezaga.*) — " An improved combined " boat and carriage, designed for use on either land or water, and in apparatus connected therewith."

The said boat has a flat bottom. Between the two bottoms is placed a thick bed or layer of cork which renders the boat buoyant. In the fore-part of the boat is arranged a driving crank shaft. On the extremeties of the said shaft outside the hull are placed two large wheels which become driving wheels when the boat is on land. The said shaft may also be provided with paddle wheels. A connecting rod is attached to the crank, the other end of the said connecting rod being jointed to a rod which rests on rails. Small rollers attached to this rod permit the same to work without friction. Bars passed transversely through rings above the said rollers serve as handles, whereby persons in the boat can impart a reciprocating motion to the rod, and can thereby turn the driving shaft.

The motive power may be sometimes applied by means of a lever formed with a slot through which the crank passes; the said lever is hinged or jointed at one end near the shaft, while its other end is connected to a treadle. If necessary I employ a number of these levers combined with a system of eccentrics.

Upon the shaft are fixed two bevel wheels, which wheels transmit the motion through bevel pinions to two screw shafts and screws. Upon or over the rudder post and near the extremity is a horizontal shaft which carries at its end two rolling wheels which, when the boat is on land, serve to maintain its equilibrium, and also allow it to be guided by the helm. To the main wheels at the fore part of the boat, and below the water line, projecting shutters of sheet iron or other material are hinged to the hull. These shutters when open serve as a means for taking advantage of a favourable current, and in the contrary case they are adjusted to lie close to the sides of the boat. The system of eccentrics or excentric fly wheel is weighted on one side of its periphery to give it a centre of gravity. The first impulse being exerted upon the lever to overcome the resistance of the dead points the fly wheel by its own weight runs the rest of its course. I sometimes fix a cylinder in the boat, in which cylinder shall turn a wheel with blades or vanes fixed on a suitable axis. Steam will be admitted into this cylinder at the top and bottom in such a manner that the vanes by their movement will overcome the resistance at the dead points, so that the impulse once given the eccentric fly wheel will travel the rest of its course by its own weight.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 24.—N° 3934.

ABEL, Charles Denton.—(*A communication from Charles Mongin.*)—"Improvements in rolling mills."

This invention consists in converting the ordinary friction of rolls in their bearings into rolling friction by providing the rolls with necks having V surfaces, those of the one roller being made to bear directly while those of the other bear through the intervention of an antifriction roller upon a V surface on the inner circumference of the rings surrounding the necks, which rings are consequently made to revolve as the rolls turn. The rolls are adjusted by making the antifriction rollers which have V grooves in two halves, which may be moved nearer together or farther apart by right and left handed screws.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 24.—N° 3935.

ROBINSON, Henry, and SMITH, John.—"Improvements in apparatus for dressing millstones."

This invention consists in causing the cracks near the periphery of millstones to be coarser or wider apart than near the centre thereof.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 24.—N° 3936.

BOBY, Robert.—"Improvements in the construction of floors for malt kilns or drying rooms."

The floor consists of removable panels composed of frames filled in with wire rods.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 24.—N° 3937.

TURNBULL, Henry Charles Montagu.—"Improvements in apparatus or means for working punkahs " or fans."

A train of wheels driven by a weight works a fly wheel which is connected to the punkah by cords. The fly-wheel is weighted at one part of its periphery to give a jerk to the punkah at one portion of its movement. The suspending and steadying cords of the punkah are all led through a ring at the centre of the punkah rod, so that by letting out or drawing in the cords the height of the punkah can be regulated.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 24.—N° 3938.

CLIFFORD, Henry.—"Improvements in the manufacture of submarine telegraph cables."

The core of submarine cables is covered with powdered silica to preserve it from insects. The silica is preferably made to adhere to yarn previously steeped in pitch or other material, which is afterwards wound upon the core.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 24.—N° 3939.

RIDGWAY, William Henry, and WALKER, Frederick William.—"Improvements in the " manufacture of ornamental bricks, tiles, slabs, and other like articles, and in the machinery or apparatus " employed therein."

This invention relates, firstly, to a peculiar method of inlaying bricks, tiles, slabs, and other like articles composed of ground clay commonly called "dust." It is proposed to use in addition to the ordinary plunger a loose plunger or plungers built up of two or more parts, by which a brick or tile may be inlaid or pressed up with the face upwards by the usual stroke of the fly press.

Secondly, it is proposed to produce veneered tiles, say blue or white, by using a perforated plate ⅜ of an inch thick according to the thickness of the veneer required. For a 3 inch tile the perforation would be a little over 3 inches square. This plate is laid upon a board, the hole filled with dust, and compressed slightly with a plug or soft elastic pad.

The mould being charged with white dust the plate charged with blue is laid upon it, guided by certain pins and corresponding recesses; a blow with the press then drives the blue down upon the white, forming a veneered tile, brick, or slate.

Thirdly, it is proposed to inlay plain or ornamental tiles into another tile in the following manner:—A plate is prepared the size of the larger tile, having perforations through it the size of the smaller tiles. Into the perforations inner plates or plugs are fitted. These plates or plugs being drawn back the small tile or tiles are placed face down into the recesses thus left.

The outer plates, plugs, and tiles are then placed together on the top of the mould (filled with ordinary "dust") and a blow from the press drives the plugs to a level with the outer plate (thus forcing the small tiles into the larger one and pressing all up complete.

[Printed, 1*s*. Drawing.]

A.D. 1868, December 24.—N° 3940.

PILLINER, ALFRED COLERICK, and HILL, JAMES CHARLES.—(*Provisional protection only.*)—"Improvements in machinery for obtaining motive power, applicable also to measuring, raising, exhausting, forcing, and compressing fluids."

The invention described in this Provisional Specification applies to engines in which toothed wheels gearing together are enclosed in a case. Such engines are made to work expansively by means of a plug in the axis of one of the wheels, through which the steam is admitted, and which plug is set so as to obtain the degree of expansion required. Passages are provided to prevent the teeth forming steam tight joints with each other and with the cover before the proper time. The driving axis is passed loosely through one of the wheels, and the wheel drives it.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 24.—N° 3941.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from Edward Halliday Ashcroft.*)—"Improvements in steam valves and their adjuncts."

The invention described in this Complete Specification is composed of three features or details, the first of which is designed to obviate the tendency of water to prime and be drawn over with the escaping steam, and this is accomplished by the use of an auxiliary valve secured to the lower end of the primary valve or its stem, the said auxilary valve also serving the purpose upon failure of the spring of the primary valve, by fracture or otherwise, to close the lower end of the steam passage of the valve case and entirely cut off escape of steam.

The object of the second portion of this invention is to provide a suitable metal or composition of metals to be used in the manufacture of safety valves or other valves for steam purposes, which will not become corroded by the action of steam water or any other action to which they are exposed.

The object of the third portion of the invention is to produce a cheap and economical valve casing with ends not liable to be split, enlarged, or fractured by the fitter in connecting the pipes to them.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 24.—N° 3942.

EHRHARDT, WILLIAM.—"Improvements in watches."

One part of this invention refers to mechanism for winding up and setting the hands of keyless watches, and consists in making the axis of the toothed wheel with which a bevilled pinion on the inner end of the winding axis gears capable of motion in a slot in one of the plates of the watch, a spring causing the said wheel to gear with toothed gearing which transmits the motion to the spring barrel for winding up the watch. By turning the winding axis in a direction contrary to that proper to wind up the watch the toothed wheel described is caused to recede and its teeth to escape over the teeth of the toothed gearing of the winding mechanism without injury to the said mechanism. The toothed wheel described may by means of a lever acted upon from the edge of the watch be ungeared from the winding mechanism and geared with toothed mechanism for setting the hands of the watch. On removing the pressure from the lever the toothed wheel is by the action of its spring again geared with the winding mechanism.

Another part refers to the stop work for preventing the overwinding of watches, and consists in "setting up" the mainspring by making in the arbor of the spring barrel four or other number of holes, more than one, in either of which holes the pin which acts on the stop wheel can be placed. The setting up of the mainspring is by this means effected with greater nicety than when the arbor has only one hole as usual.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 24.—N° 3943.

HILLEBRANDT, Hermann.—(*A communication from Joseph Hillebrandt.*)—(*Provisional protection only.*) —" Improvements in repeating fire-arms."

This invention refers to repeating fire arms in which the fixed and revolving barrels slide to and from the break off, and the said invention consists principally in extracting the cases of the exploded cartridges from the chambers of the revolving barrel by means of a star shaped extractor plate capable of rotating on the rod upon which the barrels slide. The extractor plate is situated near the break off, and when the revolving barrel is moved to the break off by a lever jointed to the rear of the fixed barrel the said extractor plate enters a recess in and lies flush with the rear end of the revolving barrel. By means of a ratchet and a pin or wire on the extractor plate the revolving barrel is rotated. The cartridges are placed in the chambers of the revolving barrel by turning aside a detached jointed part of the break off portions of the rims of the cartridges engaging with the star shaped extractor plate. After discharge the fixed and revolving barrels are moved from the break off by the lever leaving the whole of the cases of the exploded cartridges engaged by their rims in the extractor plate. The barrels having been moved the required distance the said cases are entirely extracted and fall from the fire arm. The detached jointed part of the break off may be used to unload the fire arm.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 26.—N° 3944.

BROOMAN, Clinton Edgcumbe.—(*A communication from Auguste Beliard and Adolphe Delaplace.*)—(*Provisional protection only.*)—" An improved portable lamp or lantern."

This apparatus consists of a box hermetically closed, except to a central wick tube carried up from the centre; the box contains a wick or sponge impregnated with oil or essence; the box has hinged thereto a cover and three screens, one of which is transparent. When the cover is raised a spring acts so as to lift the three screens, which will then protect the wick from draught; the cover is kept in an inclined position by a hook, so as in conjunction with the screens to completely surround the flame when the lamp is required to give light. A handle for holding the lamp is fitted to the hook. When the lamp is not in use the screens and cover fold upon the box, the central tube passing through a central hole in each screen into a recess in the cover. The hook and handle fold under the box.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 26.—N° 3945.

BUTTERWORTH, Ellis.—(*Provisional protection only.*)—" Certain improvements in or applicable to " furnaces."

The invention consists, first, in forming one or more holes in the furnace door, to which is applied a valve or valves or shutters, which are opened when the furnace door is opened or closed, and are closed by clock work or other apparatus attached to the furnace door. By this means the quantity of air admitted into the furnace to consume the smoke can be regulated and cut off by self acting means.

Secondly, in assisting the draft when required by means of a jet of steam blown into the furnace or into the flue behind the furnace, which jet is opened when the furnace door is opened or closed, and closed by self acting means.

Thirdly, in assisting the draft by opening the damper when the furnace door is opened or closed, and closing the same as far as required when the smoke is consumed by self acting means.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 26.—N° 3946.

GORDON, Charles.—(*Provisional protection only.*)—" Improvements in the construction of breech-loading " fire-arms."

This invention relates to certain improvements in the construction of breech-loading fire-arms in which central-fire ammunition is employed. The breech-block is hollow, and is hinged at one side of the breech chamber. On the side of the breech-block opposite to the hinge is a circular bar mounted in bearings attached to the breech block. This is termed the "cocking-bar," and on the exterior thereof is formed a V shaped groove, [*and also a longitudinal groove**] connecting the arms of the latter. The " cocking-bar " is actuated by a lever. A " discharging-block " is placed in the forward end of the breech-block chamber, and carries a discharging pin, which works through an aperture formed in the forward face of the breech-block.

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* The words " and also a longitudinal groove " are found in the copy of the Abridgment delivered by the Applicant, but do not appear in the original Abridgment.

The upper surface of the " discharging-block " is provided with half and full cock bents for the reception of the sear tooth. A stud is attached to the side of the " discharging-block," and works through a slot formed in the side of the breech-block into the grooves in the " cocking-bar." At the rear end of the breech-block chamber is placed a bolt, over which is placed a spiral spring. The sear consists of a bent piece of metal placed over the before mentioned mechanism and mounted on a transverse pin, on which it works as a pivot. A tooth at the forward end of the sear is provided to take into the half and full cock bents. The rear end of the sear has a bevilled face, which enters into a hollow formed in the head of the spring-bolt. By partially rotating the " cocking-bar " the stud attached to the " discharging-block " is caused to traverse the V shaped groove, carrying the block backwards and compressing the spiral spring, and causing the sear tooth to take into the full cock bent. By this action the bevilled face of the sear is brought within the operation of the trigger-pin, which is a pin working through the breech-plate, and upon depressing the head thereof the forward end of the pin depresses the bevilled face of the sear and disengages the tooth from the bent, when the spring being released from pressure, the " discharging-block " is forced forward and the pin carried by the latter passes through the aperture in the forward end of the breech-block and striking the cartridge head causes ignition. The trigger-pin acts as a locking bolt by entering a recess in the head of the spring bolt.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 26.—N° 3947.

ELDRIDGE, George, and SMITH, Isaac.—(*Provisional protection only.*)—" Improvements in apparatus " for closing casks and filling and drawing off liquid therefrom."

According to this Provisional Specification there is screwed into the bung hole or into the tap hole of the cask a ring or bushing carrying a hollow cone projecting into the cask and containing another similar cone. The cones have slits in them, and the inner cone is turned to bring the slits to coincide or otherwise.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 28.—N° 3948.

MILLS, James Perry. — (*Provisional protection only.*) — " Improvements in the rest pins or keys for " pianofortes, harps, and all other musical string instruments."

1st. Its immovability when wound up.

2nd. By withdrawing the pin that controls the spring it can be unwound with more certainty than the present way,

3d. Being made of drawn steel wire (instead of iron) is not liable to snap.

4th. Not requiring continual tuning, the holes are not enlarged so as to involve new pins of larger size.

5th. Is available for all stringed instruments.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 28.—N° 3949.

HARINGTON, Alexander Stuart.—(*Provisional protection only.*)—" An improved pouch for tobacco " and other articles used by smokers."

The improved pouch is made as follows :—The exterior portion thereof is made of leather, skin, or similar or suitable good wearing material (pig skin being preferred, as being considered more durable than other leather) it is made with gussets and an overlapping cover, also of the same material, the whole being so made as to roll up into a portable form ; and to such cover is firmly attached a strong narrow piece or thong of the same or similar strong material, long enough to be passed two, three, or more times round the pouch, so as to secure it when closed and either full or only partially filled in a very simple and effective manner without any other fastening.

The inside of the pouch is formed of vulcanised india rubber, which is firmly attached as a lining by stitching or otherwise to the external casing of leather or other material, and fits closely the interior of the pouch, both inside the gussets and the overlapping cover.

In the interior of the pouch it is proposed to form convenient receptacles for all such articles as are generally carried by smokers.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 28.—N° 3950.

LAKE, William Robert. — (*A communication from David Childs Rogers.*)—" An improved machine for " pegging boots and shoes."

My invention consists in operating the driving bar by a rack and pinion, the rack being secured to the driving bar, and the pinion (which is revolved by a crank) being provided with teeth on a portion only of its surface. The bar is surrounded by a spiral spring, whose upper end bears against a plug, by means of which the spring can be readily removed or inserted. My invention also consists in producing a positive motion of the feed lever which determines the distance between two successive pegs by means of a cam; and it also consists in an improved device for adjusting the gauge to regulate the distance of the pegs from the edge of the sole. The gauge is pivotted to the feed lever, and its extremity rests against the edge of the sole; when raised the gauge is thrown by means of a lever towards the awl, and when depressed it is carried back therefrom. The said invention furthermore consists in the employment of a toothed roll in combination with a ratchet wheel and pawl for feeding the peg wood forward into the peg tube at the required time; and in constructing the peg tube of a diamond shaped or square cross sectional form; also in the employment of a peg-holder, on which the wood is coiled, and whence it is conducted through a guide to the peg tube.

[Printed, 1*s.* Drawings.]

A.D. 1868, December 28.—Nº 3951.

YORATH, Henry.—" Improvements in apparatus for elevating corn, hay, and other crops on to stacks."

According to this Provisional Specification sheaves or bundles of a crop are placed upon a fork and drawn up to the top of a stack by a horse harnessed to a rope which passes over pulleys upon a gaff carried by a mast, and over a pulley at the foot of the mast which is erected at the side of the stack.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 29.—Nº 3952.

ABEL, Charles Denton.—(*A communication from James Beach Clow.*)—" Improvements in the manufacture of wrought metal pipes, and in the apparatus employed for that purpose."

This invention consists in making the dies through which the skelp is drawn of two fixed parts instead of the one part being hinged as heretofore, and in forming a slot along the top between the two parts for the passage of the tongs by which the skelp is dragged through. The dies are made flaring on the side on which the skelp enters, and cylindrical on the other side. The tongs are attached to a travelling endless chain by which the skelp is dragged through the dies.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 29.—Nº 3953.

LANDA, Jules Alexandre Alphonse.—" An improved machinery for engraving letters, medaillons, and other ornaments on stone or metal."

This invention has reference to machinery for engraving on metal or stone, in which a pantograph mechanism acts with a steel or diamond graving point upon the material to be engraved situated on a table moveable laterally in every direction while the other or tracing point of the pantograph is made to pass along grooved type situated on an adjustable type table. The type are fixed either directly on the type table or in composing sticks, which may be either straight or curved, and the type are made with rounded ends to suit the latter. Peculiar forms of type are described for forming wave lines, scrolls, rosettes, and block letters.

[Printed, 1*s.* 4*d.* Drawings.]

A.D. 1868, December 29.—Nº 3954.

BROWNE, Alexander.—(*A communication from George Bligh Capel.*)—(*Provisional protection only.*) " Improved methods and processes of manufacturing illuminating gas, and apparatus to be employed therein and therefor, and in treating the products of such processes to improve and increase their commercial value."

The novelty of this invention consists in operating upon petroleum or other hydro-carbon, and some of the products derived therefrom, in novel and improved apparatus for the purpose of producing illuminating gas by one or other of three processes, in each of which different kinds of apparatus are to be employed. Air is forced into the vessel containing the hydrocarbon, and the moisture in the air is condensed, thereby preventing condensation taking place in the pipes leading to the burners.

The different apparatuses are fully represented by Drawings, and in one of such said apparatus the novelty consists in fixing the vessel or tank that is to contain the hydrocarbon inside of a gasometer, and in placing the said tank in the earth below the frosts point so that the vapours shall be generated at a low temperature to prevent condensation thereof in the pipes leading to the burners. In the other two apparatus the gasometer is connected by pipes to the vessels containing the hydrocarbon and its products, the said vessels being in other respects separate from the gasometer.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 29.—Nº 3955.

PICK, Ignac.—" Improvements in the manufacture of travelling and hand bags."

According to this invention the closing flap or cover (which hitherto has been attached to the upper part of the main body of the bag, and made to close or cover the exterior pocket by falling over its outer surface) is attached to the fabric forming the additional side pocket, either at the upper edge thereof, or at any other suitable position.

By this arrangement, the cover being opened (in order to pack, unpack, or examine the contents of the pocket) remains in a downward position, and consequently both hands are free instead of one hand being required, as heretofore, to hold up the flap or cover.

The next improvement consists in cutting a slot at each end of the closing flap (underneath the position of the tabs which secure the cover to the upper part of the body of the bag) so that when the cover or flap is thrown upwards to close the pocket, the rivetted stems protrude through the slots and fasten the flap; this is useful in case the tabs should inadvertently not be fastened. Slotted plates may be applied to strengthen the slots in the fabric.

The third improvement consists in forming bags of one piece of leather or fabric, by doubling the same, and making gussets or gathers at each end, which are pressed inwards and concealed by the lining; the edges of the fabric being then secured to the frame.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 29.—N° 3956.

MICHEL, François Alexandre Victor.—" Improvements in the manufacture or production of printing " surfaces."

The invention has for object the production of printing surfaces from set up or composed type, engraved plates, and various surfaces bearing letters, characters, devices, or designs. The inventor first produces, by pressure, from the type plate or surface a mould, matrix, cast, or impression in unsized and damped paper, which he coats or treats with an agent (preferring resin dissolved in alcohol) which renders it waterproof and protects it from being attacked by the acids or chemicals used in electro-type or electro metallurgy. The paper mould, matrix, or impression, duly coated, is used in the electro-typing or electro metallurgical bath with the acids or chemicals employed in electro-typing, and a metallic deposit, cast, copy, or shell is obtained. The paper mould or matrix is made with a frame or border, having a flanged or projecting part with inclined side and a flat rim beyond, so that a corresponding frame or border will be formed on the electro metallic deposit or shell, which will be recessed where the mould border projects, and will present a sloping side. Molten lead or the like is run into this recess to form a backing to the electro metallic surface (ridge pieces being placed on the flat rim), and the electro-metallic surface is fastened to a wood or metal or other rigid block or foundation by nails, screws, or other fasteners inserted in or applied to the sloping border, so as not to come flush with the printing surface. When the process is applied to engraved plates in intaglio, or surfaces with sunken devices, the paper applied thereon to form a mould or matrix is powdered or backed with resin or other agent to cause it to adhere to a backing of lead or other material, and after pressure the mould with its backing is made waterproof and acid-proof as above.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 29.—N° 3957.

GILLMAN, James.—(*Provisional protection only*.)—" Contracting lever scale."

A lever with arms of unequal length. A is the fulcrum by which the beam is supported and plays as on an axis; E is the short arm, and B is the long arm; H is the scale for the reception of goods to be weighed. A bent arm (N) is extended from the pillar of the fulcrum to support the long arm (B) of the lever; C is a counterbalance or opposing weight. The long arm is graduated by figures and notches into divisions. F is a ball of a certain heaviness, which can be slipped along the bar to any required point. As will be seen by the above, this is an ordinary sale beam, with the exception that the arms being of unequal length small weights are made to represent larger ones, whilst the long arm of the lever may be made so light as to turn far more accurately than an ordinary scale beam.

I claim the arm (N) and the counterbalance (C) as an improvement in the construction of a scale beam, and I also claim the application of the principle of contracting weights to a counter scale beam.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 29.—N° 3958.

GISBORNE, Frederic Newton.—(*Provisional protection only*.)—" Improvements in means or apparatus " for giving motion to sewing and other machines."

For this purpose a weight is employed, which by special arrangements of gearing gives motion to a toothed pinion taking into a toothed wheel fixed on the driving shaft of the machine, or motion may be communicated to such driving shaft by means of pulleys and straps or bands.

The following is the mode in which the parts are arranged so as to give a quick speed to the driving wheel or pulley by means of a small amount of fall to a heavy weight.

The weight is connected to a drum or pulley by means of a chain, cord, or band, which is wound upon such drum or pulley in any suitable manner as will be readily understood. Upon the axis of this drum or pulley is fixed a broad internal toothed wheel which is caused to rotate by the falling of the weight, and in so doing it gives motion to a toothed wheel carried by an arm mounted loosely upon the axis, and causes such arm to travel around the axis. This toothed wheel gives motion to a pinion also mounted loosely on the axis and fixed rigidly to another arm carrying another toothed wheel, which in its rotation around the axis also receives motion from the internal toothed wheel, but at an increased speed, and so on, there being as many pinions and arms carrying toothed wheels mounted on the axis as may be required to obtain the desired speed, the last pinion being fixed to a toothed wheel giving motion to the drum or toothed wheel by which the driving axis of the machine is driven; and in order to enable the speed to be regulated as desired a brush surface is pressed up against the periphery of a wheel by means of a screw, so as to apply such an amount of friction thereto as may be required to regulate the speed.

For the purpose of stopping the apparatus as may be required when working I employ a treadle which is connected to a strap or band passing around the outside of the internal toothed wheel, so that by depressing the treadle the strap or band may be caused to stop the motion of the apparatus. Or if it be desired to stop the driving apparatus so that it may be left at rest a stop is employed which comes against projections or recesses in one of the wheels.

If desired a spring may be employed instead of a weight, and instead of employing the arrangement above described the toothed pinions and wheels may be mounted loosely upon two axes of motion, a toothed pinion and wheel being rigidly fixed together and mounted in pairs intermediate of each other on each shaft or axis. The weight or spring may if desired be wound up by hand, or according to one part of the invention the weight of the attendant on a seat or platform may effect this object. Or the weight of the attendant may be employed instead of the weight first described, the attendant being supported on a seat or platform capable of moving to and fro through a given space. The return of the seat or platform being caused to take place immediately upon being vacated by the attendant.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 29.—N° 3959.

BOUSFIELD, George Tomlinson. — (*A communication from Alfred Paraf.*) — "Improvements in "extracting the coloring matter of madder root from the ligneous matter of the plant."

This Provisional Specification describes extracting the coloring matter from madder root by treating it with water at a high temperature and afterwards precipitating the coloring matter.

Also dissolving the sugary matter of madder root in water at a moderate temperature and extracting the coloring matter with water at a high temperature.

Also treating madder root with acid to remove the resinous matter, and then treating with hot water to extract the coloring matter.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 29.—N° 3960.

SLATER, George.—(*Provisional protection only.*)—" An improved machine for plaiting or doubling strips " or sheets of cloth, paper, and other materials."

My invention relates to machines which are more especially designed for forming plaits or strips or sheets of linen, calico, and other textile fabrics for the skirts of ladies' dresses, shirt fronts, and other articles, and the said invention consists chiefly in the peculiar method in which a pair of rollers are caused to operate in combination with a folding bar or plate to feed forward the fabric and form the plaits or folds transversely in the same, and also in the mechanism for giving the required motion to the various parts of the machine.

The two rollers are geared together, and the lower roller is connected by suitable gearing with the driving shaft. The said shaft is provided with a crank which is connected by a rod to the vibrating frame, which is thus by the rotation of the said driving shaft caused to vibrate and give to the upper roller a reciprocating motion upon the lower roller while the two rollers rotate on their axes. The folding plate is fixed in front of the vibrating frame, with its edge resting upon the lower roller, and in such a position that as the frame moves towards the said plate or bar a fold of the fabric is carried over its edge; this fold is then compressed between the two rollers, and the plait thereby formed is held between the rollers while the frame moves back and carries the fabric forward far enough to form another plait.

My invention also relates to means for forming continuous folds or plaits lengthwise in sheets or strips of cloth or other material, and this part of the said invention consists in the peculiar construction of dies or folders for forming the plaits or folds, and in their combination with the pressing rollers. The said dies or folders consist of two parts, between which the cloth or other material is drawn by the rollers, the dies giving the desired form or figure to the plaits, which are then compressed between the rollers. I prefer to support the dies in two blocks or plates which are arranged in front of the rollers and parallel to the same, and which are secured together with the dies between them by screws or otherwise. These plates are formed with a dove-tail or other groove, and the dies are fitted to slide in the said groove.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 29.—N° 3961.

MARSH, John.—(*Provisional protection only.*)—" Improvements in covering or capping bottles, jars, and " other surfaces."

The inventors first makes a cap or cover of india rubber, vulcanized or prepared, or other elastic substance, and then places this over any cork or stopper used and encompasses the same therein, making an efficient closure without the necessity of using string or wire.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 30.—N° 3962.

HUGHES, Richard, and HUGHES, Thomas.—(*Provisional protection only.*)—" Improvements in " velocipedes."

Its leading features embrace two parts, the front or guiding and propelling part and the hind or carrying part. The front part consists of the steering wheel, the guiding bridle of which rising from the axle partly supports the wooden horse or seat upon which the driver is mounted. A pair of shafts attached to the flanks of the horse pass to the rear and connect it and the steering wheel upon which it is centred with another pair of mounted wheels carrying a seat.

Motion is produced by the direct pressure of the rider's foot on the ground; being mounted on the horse, his feet in stirrups, he presses alternately the ground with each foot and thus urges forward the steering wheel and with it the wooden horse, himself, and the other part of the carriage.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 30.—N° 3963.

LAURIE, John, and WHITTAKER, James.—(*Provisional protection only.*)—" Improvements in machinery " for screwing and tapping."

Our Invention consist in applying a brake to any practicable part of an ordinary bolt and nut tapping and screwing machine, which causes the part to which it is applied to remain rigid while the thread is cut, but should a greater resistance arise than is caused by cutting the thread the power of the brake is overcome, the part moves with the other moving parts of the machine, and the action of cutting the thread ceases; or the action may be reversed and the machine continue in motion with the exception of those parts to which our invention is applied.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 30.—N° 3964.

FOX, Samson, FOX, William, REFFITT, Joseph, and GRANGE, George.—" Improvements in " machinery or apparatus for cutting and shaping wood or other materials."

This invention consists,—

Firstly, In the construction of machinery for roughing or preparing wood or metal to be afterwards formed into bobbins, spools, and other articles.

Secondly, In the construction of finishing machinery to which is adapted one rotary spindle to form a double machine.

Thirdly, In constructing the rotary spindles with two conical necks so that they may be adjusted in their bearings.

Fourthly, In making the headstock to swivel or turn so that it may be set out of parallelism with the axial line of the material being operated upon.

[Printed, 1*s.* 2*d.* Drawings.]

A.D. 1868, December 30.—N° 3965.

CAZALAT, Antoine Galy.—(*Provisional protection only.*)—" Improvements in the manufacture of steel, " and in the apparatus employed therein."

The invention consists in melting at a high temperature mixtures of cast iron and sesquioxide of titaniferous magnetic iron ore in a reverberatory furnace, urged with compressed hot air and and superheated steam escaping under the grate in jets.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 30.—N° 3966.

HUTCHESON, James, and HUTCHESON, Archibald.—(*Provisional protection only.*)—" A new or " improved elevator."

This said invention consists substantially in the construction and use of a fixed or stationary pipe, hollow barrel, or cylinder, having a smooth surfaced deep threaded screw revolving within it, driven in the opposite direction to which the screw ascends at the necessarily sufficiently higher speed within it, so as to effect the screwing, raising, or elevating of water or other liquid or semi-liquid or fluid, granular or lumpy substance, or a mixture of these, such as could easily pass into the lower end of the screw and pipe from this lower end and level to the top of the pipe, whether it be placed vertically or at an angle (the lower end being immersed in the particular substance to be raised, and the upper end provided with a slanting spout or other convenient or equivalent means of delivery) all against the gravitating power and tendency to run down the screw, owing to the angle of the thread allowing the fluid to run down on all sides round to the lower level; and in contradistinction to the modes in use, of having elevating screws with their axes lying at such an angle that the rising incline or angle of the thread really runs down to the horizon on the side rising out of the liquid or substance running in and down the screw by its gravitation and fluidity, and thereby rising up the screw at whatever speed the screw is turned, and rather assisted than obstructed by the revolving of the case or cylinder along with the screw.

And which said invention makes a lighter and more convenient and portable elevator for many useful purposes than those heretofore in use, and where those are practically inapplicable, even if they absorb somewhat less power than is required for the new elevator.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 30.—N° 3967.

HENLEY, Thomas Frederick.—"Improved means of operating upon stick or gum lac for the extraction " of colouring matter or lac dye, and for the production of shell lac."

This mainly consists in the employment of hydraulic presses or screw-lever or cam presses or similar machines for exerting mechanical pressure in combination with heated metallic plates for the separation of the constituent elements of stick lac, especially lac dye and gum lac in its various forms.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 30.—N° 3968.

JOHNSON, John Henry.—(*A communication from Mathias Schaffhauser.*)—" Improvements in the " manufacture of paper tubes employed in the spinning of wool and other fibrous substances, and in the " machinery or apparatus employed therein."

This invention consists of a peculiar combination and arrangement of self acting mechanism for making paper tubes employed in spinning wool and other fibrous substances. Two tubes are made simultaneously from a continuous band or strip of paper fed into the machine from a reel. The strip is first printed at intervals with a name or trade mark; then cut into sections of proper length and shape. These are taken by pincers to revolving gum brushes, after which the paper is coiled on a conical mandrill, and the finished tube being knocked off the mandrill by a sliding ring or discharger, and falling into a basket or other receptacle beneath.

[Printed, 1*s*. Drawing.]

A.D. 1868, December 30.—N° 3969.

WINTER, William.—" Improvements in sewing machines."

The improvements consist,—

(1). In constructing the needle bar hollow with a slot hole for the insertion of the lever, and in placing within the said hollow bar a spiral spring to press upon the lever.

(2). In constructing the bearings for the needle bar with a longitudinal slit, so that the wear of the working parts may be compensated for.

(3). In the employment of a boss cam to operate a lever for working the feed motion, having at the side thereof a stud with friction roller to operate a lever for lifting the foot.

(4). In the application of a pair of nippers to nip the thread during the descent of the needle and liberate it on the needle entering the fabric.

(5). In giving motion to the toothed feed wheel by a catch acting directly upon the teeth of the said wheel.

(6). In applying cams on the shafts to act upon the studs fixed to the thread carriers or to the levers working in connection therewith.

[Printed, 10*d*. Drawing.]

A.D. 1868, December 30.—N° 3970.

MONESTIER, Charles, and BANG, Ivar.—(*Provisional protection only.*)—" Improvements in the " preparation of impermeable paper for manufacturing several fabrics or articles."

This invention consists, firstly, in soaking sized paper in sulphuric acid, by which means a layer of vegetable parchment is deposited on the surface of the paper.

Secondly, in soaking sized paper in hydrated sulphuric acid, then thoroughly washing it in water and afterwards in an alkaline solution; the paper is then soaked in a solution of salts of baryta in order to give it a white and shining appearance.

Thirdly, in operating upon unsized paper that has previously been soaked in a solution of salts of baryta.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 30.—N° 3971.

DAVIES, George.—(*A communication from Max Braun.*)—" Improvements in separating ores and other " materials, and in apparatus therefor."

This invention relates to apparatus patented 4th April 1868 (N° 1146), and in carrying it out; each sieve is made of a mesh large enough for the passage through of one of the kinds of ore in the mixed materials operated upon; and two or more sieves are used according to the number of kinds of ore or materials in the mixture. On each sieve there is arranged a layer of the kind of ore intended to pass through (or other substance of the same specific gravity), but such layer is made to consist of pieces or grains which are too large to pass through. The heaviest kind of ore is placed on the sieve on which the materials are first supplied, and the next heaviest on the second sieve, and so on. The materials which do not pass through one sieve are carried over to the next, which is placed at a lower level.

[Printed, 1*s*. 4*d*. Drawings.]

A.D. 1868, December 30.—N° 3972.

GORNALL, Paul, and GORNALL, Richard.—" Improvements in the 'long collars' of roving and " slubbing frames used in the manufacture of cotton or other fibrous material."

This invention relates to the " long collars " of such frames, which we construct with a bush or ring of metal at the upper end of the collar so that when worn may be removed and replaced by a new one.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 30.—N° 3973.

BIGG, Henry Heather.—(*Provisional protection only.*)—" Improvements in the construction of artificial " legs."

This invention relates to the construction of the ankle joint and knee joint, and the mode of connecting the several parts.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 30.—N° 3974.

NOUALHIER, Eugene Theodore.—" Improvements in apparatus for supplying, blowing in, and " exhausting air, producing draft and ventilating."

The apparatus consists of a tube which is surrounded or surmounted by another tube, extending round the required portion of the length of the first tube, and provided with a number of vanes, deflectors, or curved or other plates, which together with radial or other partitions or plates form air ducts or passages, into and through which air is drawn, and whence it passes away round the top or end of the inner tube. The parts may be fixed so that the apparatus may be used in all requisite aspects, positions, or circumstances. To prevent counter currents a spherical or other cowl, or a dome shaped cap, may be pivoted or hung at the top of the outer tube so as to take the required positions or inclinations for this purpose.

The apparatus may be modified by reversing the position or arrangement of the tubes.

[Printed, 6*d*. Drawing.]

A.D. 1868, December 30.—N° 3975.

GEDGE, John.—(*Provisional protection only.*)—" Improvements in the manufacture of gas apparatus or " fittings."

This invention consists in making the arms of the gallery which supports the gas globe or glass with joints so that they may be bent upwards to permit the glass being passed over them from below and then return to a horizontal position to support it.

Also in placing spurs or feathers on the pendant so as to permit a cover or shade to be passed up the pendant and over these feathers which close for its passage and open out to retain it like the arms of the gallery.

These devices permit the construction of a gas pendant without branches, weights, or stays.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 31.—Nº 3976.

BONNEVILLE, Henri Adrien.—(*A communication from Joseph Gecmen.*)—" A new and improved " apparatus for drying and growing malt and all other grains, fruits, or vegetables."

This invention relates to an apparatus for drying and growing malt and all other grains, fruits, or vegetables, and consists chiefly in a series of perforated floors in separate sections, and of a space with one or more openings through which the warm or cold air, or the cold or warm water, may circulate to gain access or not into the apparatus.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 31.—Nº 3977.

DE BERGUE, Charles.—" Improvements in the permanent way of railways and of street tramways."

Constructing permanent way of railways and street tramways, with rails and transverse metal sleepers made parallel or not parallel, and of any regular or irregular solid or geometrical figure, or being T-shaped, H-shaped, or channelled, or recessed, and the voids or recesses being sometimes filled with concrete and being sometimes provided with chair or seatings at ends for supporting the rails, and sometimes being constructed in two halves or parts joined togethor longitudinally. Constructing permanent way of tramways with metal nails or knobs on edges of trams or tram supports to cause road vehicles to cross same at an angle without jolting or inconvenience.

Constructing permanent way of tramways and railways with metal rails and longitudinal lateral packings with metal nails or knobs on edges of packings as above set forth.

[Printed, 1*s*. Drawing.]

A.D. 1868, December 31.—Nº 3978.

GEDGE, William Edward.—(*A communication from François Aroud.*)—(*Provisional protection only.*)— " A novel kind of sweetmeat."

This invention consists in the incorporation of extract of meat in a sweetmeat."

This sweetmeat is made by diluting marmalade of any kind and Liebig's or other extract of meat with rum, pouring this mixture into boiling syrup of sugar and running the whole into starch moulds of any desired shape.

The sweetmeats thus formed then dried in a stove and finally candied in a cold syrup.

[Printed, 4*d*. No Drawings.]

A.D. 1868, December 31.—Nº 3979.

LAKE, William Robert. — (*A communication from John Goulding.*) — " Improvements in spinning " machines."

This invention consists, first, in a flyer so arranged as to be suspended directly from a hollow tube, the latter being provided with a pulley, or whirl, or equivalent device by which the said flyer and tube are caused to revolve, the yarn to be twisted, whether single or double, passing through the said hollow tube, and the said flyer and tube with its whirl being entirely independent of the bobbin spindle. The said invention consists, secondly, in the combination of the bobbin with a swinging adjustable rail, in such manner that when the said rail is let down for " doffing " the bobbins it can be swung out from under the flyer and thereby facilitate and expedite the operation of " doffing." The said invention consists, thirdly, in a tension equalizing device composed of a friction sleeve arranged to play upon the spindle, and acted upon by a lever and spring in such a manner as to increase and diminish the friction of the spindle, whereby the tension upon the yarn is regulated, the friction being more or less as the bobbin is raised or lowered, or as the yarn is wound upon the larger or smaller circumference thereof, and the action of the lever being governed by a movable self adjusting incline.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 31.—Nº 3980.

LAKE, William Robert.—(*A communication from Abner Mellen, John H. Wilcox, and Abner Mellen, junior.*)—" Improvements in machinery for untwisting and separating the fibres of hair ropes."

This invention relates to a machine for picking hair from hair ropes. The said invention consists, first, in the arrangement of a revolving tube through which the rope passes, and of an arm projecting from one end of the tube and carrying a spool or roller. The rope is wound once around the spool, which revolves around the axis of the tube, and thus the twist is taken out of the rope as it is being drawn forward. The end of the rope which is not being acted upon is attached to a swivel hook, which is secured to a sliding block. The latter is guided on a wire or other rail so as to move towards the machine as the rope becomes shorter. The said invention consists, secondly, in the construction of the aforesaid swivel hook or clamp. The same is made of two spring plates, the ends of which are bent and pointed so as to grasp the rope between them. A sleeve sliding on the plates presses them together so as to clamp the rope when the sleeve is on the front end of the plates. When the rope becomes so short that it cannot be held by the hook, the latter is drawn against the tube, and thereby the sleeve is pushed back on the plates so as to release the rope. The said invention also consists in the construction of the beaters for separating the fibres from the untwisted rope. These beaters are smooth bars of circular, oval, or angular cross-section. They project from a revolving drum or cylinder, and strike the hair as they come out from between two elastic feed rollers and hang down over the rounded edge of a plate which is in front of the lower one of the said elastic feed rollers.

[Printed, 8d. Drawing.]

A.D. 1868, December 31.—N° 3981.

VON OPPEN, Frederic August Kunow Waldemar.—(*A communication from Colt's Patent Fire-Arms Manufacturing Company* [*Incorporated*].)—" Improvements in revolving breech-loading fire-arms and in " cartridges for the same, and in devices attached to the said fire-arms for charging the cartridges."

The said invention relates to that kind of rifle and pistol which has a revolving breech loaded from the front, and its object is to adapt such arms to the use of metallic cartridges, to eject the cartridge shells at will, to reload them, to provide a suitable cartridge for such arms, and to provide against accidental discharge. The said invention consists in placing at the rear of the revolving breech a ring containing one or more ejecting levers, which are operated by the hammer of the arm to eject the shell from a chamber to the right of the one on top by snapping the hammer. The ring also contains a firing-pin situated a short distance to the left of where the hammer strikes the ejector. Between them is a safety notch for the hammer to rest in. Either of these can be brought under the hammer by turning the ring to the right or left.

The said invention also consists in an attachment to be placed upon the lock frame, the revolving breech being removed for the purpose of reloading the empty cartridge shells. It consists mainly of a mandrel for holding the cartridge while being capped, and a cylinder for holding it while charging. Either of these can be brought under the rammer, which is used to press down the cap and ball.

The said invention also consists in cutting a slot across the inner end of the cap-block of the metallic cartridge, so as to form two additional apertures for igniting the charge; and in securing the cap block into the outside shell by pressing a lip down upon it from out the thickness of the outside shell.

The said invention also consists in a novel form of spring ejector, operated by a thumb-piece in such a manner that when the latter is pressed in the shells are pushed forward a short distance by an inclined surface on the thumb-piece as the breech is rotated, and are then snapped out by the spring.

[Printed, 1s. 2d. Drawings.]

A.D. 1868, December 31.—N° 3982.

BARCLAY, Andrew.—" Improvements in air pumps."

The feature of novelty which constitutes this invention is the connecting of the lower part of the air-pump barrel by a pipe to an upright hollow column, which terminates in a cup at the upper end, and having a valve at the junction of the cup and column; below the cup a branch communicates between the column and receiver, having a valve therein. Mercury being placed in these separate compartments, the piston in the barrel being raised, the mercury in the hollow column falls below the level of the branch, allowing the valve in the cup to fall and permit the air in the receiver to expand into the hollow column. The return stroke of the piston raises the mercury in the hollow column and expells the air.

[Printed, 10d. Drawing.]

A.D. 1868, December 31.—N° 3983.

SAMUELSON, Bernhard.—" Improvements in the manufacture of iron and steel, and in the apparatus " connected therewith."

This invention consists, firstly, in purifying pig or cast iron in a reverberatory furnace with such re-agents as will dispense with the necessity of using a blast. This purification is carried on until the iron approximates as to its per-centage of silicon, to that contained in ordinary refined iron. The purified iron is then tapped out and subsequently puddled in a puddling furnace. Secondly, In fixing or suspending in front of the furnace and below the tapping hole a reservoir or ladle, which receives the fluid metal but allows the scum, &c. to separate and float on the surface thereof within such reservoir or ladle. The bottom of this reservoir or ladle has an orifice closed by a moveable plug or valve, as in ladles used in the Bessemer process. A carriage is provided running on a tramway, upon which is placed the moulds which are to be filled, bringing them successively under the orifice of the ladle.

[Printed, 10*d.* Drawing.]

A.D. 1868, December 31.—N° 3984.

SPILL, Daniel.—" Improvements in the production of compounds containing xyloidine."

This invention relates to the production of materials or compounds containing xyloidine, and consists in the admixture of xyloidine, or that product which results from the action of a mixture of sulphuric and nitric acids, upon ligneous or vegetable fibre, with animal, fish, vegetable, or mineral oils, such, for example, as lard oil, cod liver oil, linseed oil, or heavy coal oils, or with mixtures of the same together with the admixture of other ingredients, such as paraffine, camphor, rosin, fat, wax, india rubber, gutta percha, or Balata gum, or mixtures of the same, so as to produce a material or materials which may be employed either alone or in conjunction with pigments or other inert bodies for the production of a compound which may be applied for useful purposes in the arts, such, for example, as for the coating or the protecting of telegraph wires which have or which have not been previously coated or protected, for moulding into forms or for rolling into sheets or otherwise for spreading either upon fabrics or otherwise, or for the coating of metals and wood.

[Printed, 4*d.* No Drawings.]

A.D. 1868, December 31.—N° 3985.

WELLS, George Miles.—(*A communication from William Baxter.*)—" Improvements in wrenches."

This invention consists in making an S wrench with both jaws adjustable, the jaws being made to slide together by a mortice and tenon arrangement, and actuated by a right and left hand screw and thumb piece situate in the shank. The shank is sometimes made with a scale or divisions, so as to render the wrench applicable as calipers.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 31.—N° 3986.

NEWTON, Henry Edward.—(*A communication from Hamilton Erastus Smith.*)—" Improvements in " washing machines."

The clothes are placed in a cage consisting of horizontal bars mounted in a perforated cylinder, to which cylinder an oscillating motion is imparted.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 31.—N° 3987.

NEWTON, William Edward.—(*A communication from Ebenezer Howard Plant, Amzi Perrin Plant, and Alfred Hotchkiss.*)—" Improvements in revolving fire-arms, and in cartridges for the same and for other " fire-arms."

For revolving fire-arms the cartridges are made with a flange projecting backwards and parallel with the sides of the case, so that the revolving chamber may be loaded from the front and the empty case expelled without removing the rotating chamber from the arm.

[Printed, 8*d.* Drawing.]

A.D. 1868, December 31.—N° 3988.

GRIFFITHS, Robert.—" Improvements in propelling vessels, and in the arrangement and construction of " screw propellers and apparatus connected therewith."

One part of this invention relates to improvements by means of which the blades of screw propellers may be caused to assume such a position as will offer the least possible resistance to the passage of a vessel through the water at those times when the propeller is not employed in moving the vessel.

Another part of this invention relates to an arrangement of apparatus wherein two narrow screw propellers one placed one behind the other, both being secured to the screw shaft. A space is left between the two propellers of suitable dimensions. In this space, according to this part of the improvements, a set of "reactionary blades" are placed; these blades are stationary, and are set to a much coarser pitch than the blades of the propeller.

Another form of "reactionary blades" may be adopted according to this invention, in which there is one propeller only used on the screw shaft and two sets of "reactionary blades."

[Printed, 10*d.* Drawing.]

A.D. 1868, December 31.—N° 3989.

GIBSON, Thomas.—" Improvements in buffers to be used on railways."

Compressed air and oil or other fluid acting with a pair of convex steel discs are used instead of the ordinary metallic or other springs.

One of the discs is fitted in a moveable hollow piston and the other in a shell or cylinder fixed to the carriage, and the air and oil occupy the space between the two discs.

The steel discs come into action as the pressure on the buffer head increases, and offer a graduated force of resistance.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 31.—N° 3990.

SEELIG, John.—" Improvements in the manufacture and ventilation of hats."

A hat body is made of muslin, calico, or other fabric covered with merino, silk, or other covering material, and it is ventilated by forming holes at the back and front at parts covered by the hat band, and by other holes at the sides of the hat above the hat band. These holes are preferably protected by eyelets. A tip is formed of net buckram, galvanized wire, or the like rendered sun proof and water proof without interference with the ventilation. Or a tip is made of a fabric called air cloth composed of wool and cotton threads, woven of the same gauge as net or buckram, each thread being compound, that is to say, consisting of a number of threads, each first twisted separately and then all twisted together. The tip is covered with merino, satin, or other material. Holes are not formed in it as the net, buckram, air cloth, or wire permit due ventilation. The lining may close or end at the top or towards the tip in the form of a dome or cupola to slacken the escape of perspiration. There may be an opening at the top of such dome, and a space between it and the hat tip for accumulation of vitiated air and fresh air, the former escaping and the latter entering through the side ventilating holes. In this case the tip may be closed or of close material.

[Printed, 8*d*. Drawing.]

A.D. 1868, December 31.—N° 3991.

SHALES, Charlotte.—(*Provisional protection only.*)—" Improvements in tatting shuttles, and in the " mode of winding thread thereon."

Hitherto tatting shuttles have been supplied with thread by winding the same between the blades of said shuttle, causing more or less injury to the thread in passing between the points of the shuttle. By my improvements this is entirely obviated, the points of the shuttle are less liable to injury, and the winding of the thread is also considerably facilitated.

According to the 1st of my improvements I make the shuttle solid, and at the centre of the same I form a slot for receiving an ordinary spool containing thread. This spool is free to revolve on its axis in the shuttle, and is introduced therein by removing one side of the shuttle which is hinged or otherwise jointed thereto, and afterwards replaced in position. A spring bearing on the spool may be introduced to regulate the delivery of the thread. This latter arrangement is applicable to existing shuttles.

My 2nd improvement relates to an improved mode of winding the thread on the shuttle itself, and consists in mounting a spool permanently in a slot in the shuttle, which is solid as before. The spool is supplied with thread by rotating the same by means of a winch handle applied to its axis when it is required to wind thread thereon. This last improvement is also applicable to existing shuttles.

A third improvement consists in combining the needle or hook also employed in tatting with the shuttle by recessing it in a slide in the latter at either end, from which it is projected when required and withdrawn again within the shuttle after use.

[Printed, 4*d*. No Drawings.]

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